



Project Title: AN INTEGRATED, WASTEWATER-CENTRIC APPROACH TO WATER QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT: Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens, and Mosquito Activity

Cooperative Agreement Number: MX-00D68218-0

Dates covered by this report: April 1, 2018 to September 30, 2019

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.

- The Tulane team members met with Dr. Brady Skaggs and Ms. Gretchen Bonfert on April 25th 2019. The meeting focused on next steps for the project, including project timeline, logistics, and the Institutional Review Board (IRB) application. Ms. Mya Sherman accompanied Dr. Brady Skaggs and other team members from LPBF on a site visit on April 26th. The site visit was used to gather background information and inform the approach for data collection and outreach. Data collection instruments were drafted accordingly for community leader interviews and resident focus groups. Dr. Stephen Murphy, Ms. Sherman, and Dr. Skaggs met on May 16th to discuss the research questions and preparation for the educational outreach campaign.
- Dr. Murphy and Ms. Sherman accompanied Dr. Skaggs on a site visit on June 19th. This site visit focused specifically on the neighborhoods in the Ponchitolawa Creek Watershed. The team also scouted out potential areas to use for participant recruitment for the resident interviews.
- It was determined that individual semi-structured interviews would be a better data collection method with community residents than focus group discussions. A one-page document was sent to Dr. Skaggs on June 3rd with justification for the methodology change.
- The LPBF and Tulane team met to discuss the IRB process and external requests for information. As a result of the meeting, we have outlined a process to address external requests for information.
- Documents for the IRB submission are being prepared, and IRB submission is expected in November 2019. LPBF PI has completed the required training modules necessary for IRB review by Tulane University.

2. Were any problems encountered? If yes, please describe corrective actions taken.

Yes. Over the summer, LPBF received a call from Terri Stevens, a resident of the Dove Park neighborhood in the project area. Mrs. Stevens requested all applicable data related to the project, specifically the location of homes that have failed inspection and the information related to enteric pathogens. Upon consideration of this request, LPBF identified a potential risk to the project, which may have revealed stigmatizing information regarding results and the consent of people within the project area.

Specifically, LPBF understands after a regulatory review that there are no **Human Subjects** regulations promulgated by the US EPA for human participants, like there are for US HHS and FDA (as promulgated under 45 CFR 46, 21 CFR 50 and 56, and 21 CFR 812 and 312). LPBF understands that human subjects' studies include projects such as:

- Studies that involve human subjects to test or develop devices, products, or materials that have been developed for human use.
- Studies that collect data through intervention or interaction with individuals. Examples of this type of research include the evaluation of teaching methods and programs, internet surveys about alcohol consumption, studies that involve deception, research involving risky behaviors or attitudes, and open-ended interviews with minors about family values in a foreign country that contribute to generalizable knowledge. Data collection using non-identifiable information may be exempt. (Students are advised to discuss with the applicable IRB the process for determining exemptions.)
- Studies *using private information that can be readily identified with individuals, even if the information was not collected specifically for the study in question.*
- Studies that use bodily materials such as cells, blood, urine, tissues, organs, hair, or nail clippings, even if these were not collected for research purposes. However, such research may be considered exempt or Not Human Subjects Research if the materials/data are coded, and the investigator does not have access to the coding systems.
- Studies *that intend to produce generalizable knowledge about categories or classes of subjects from individually identifiable information.*
- Studies that involve retrospective analysis of existing individually-identifiable private information.
- Studies that use human beings to evaluate environmental alterations, for example, weatherization options, habitat modification, temperature, or lighting.

LPBF is concerned that collecting enteric pathogen information, such as the presence of an enteric pathogen at a postal address and GPS location, could potentially stigmatize or harm individuals residing near those areas. It is essential that researchers evaluate whether or not their research could result in potential group harms and, if this is a possibility, take appropriate steps to minimize this risk. Potential harms from research

may affect the group with which the individual is associated, not just the individual who participated in the research.

To mitigate this risk, LPBF has implemented data management protocols to “block data” or report data in a neighborhood or area level, not as the individual or direct postal addresses. By reporting neighborhood or area-level of pathogen presence and failure rates, LPBF looks to mitigate singling out individuals or families with identifiable information.

3. Is the project work on schedule?

LPBF is behind the project timeline and modified the project schedule as noted in *Attachment A*.

4. Document any changes in project management (personnel), and provide the updated contact information.

No changes in project management at LPBF have occurred.

5. Outline the work projected for the next reporting period.

LPBF will be conducting the following work in the next reporting period:

- QAPP is in final review after making modifications related to data management. LPBF will be submitting the QAPP for EPA review in November 2019.
- A field assessment of targeted areas will be performed, including the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water.
- Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose the ten (10) neighborhoods for further ("Phase I") analysis.
- Tulane University will submit project for Community Outreach and Engagement subtask to the university's *Institutional Review Board* (IRB) for the collection of outreach metrics by interview. Approval is anticipated in November 2019.
- Phase I assessments of target areas will also begin, including background data for the pathogen indicators (fecal coliform), adult and larvae mosquito populations, and a suite of enteric pathogens.

Financial Report

Budget to Actual

For the Period of April 01, 2018 – September 30, 2019

	Apr '18 - Sep '19	Budget	\$ Over Budget
Ordinary Income/Expense			
Income			
304 · LPBF Grants & Contracts	36,698.83	412,733.00	(376,034.17)
Total Income	36,698.83	412,733.00	(376,034.17)
Expense			
201 · LPBF Salary & Wages	11,989.75	97,976.00	(85,986.25)
202 · LPBF Fringe Benefits	1,935.43	18,172.00	(16,236.57)
203 · LPBF Indirect	1,887.04	19,595.00	(17,707.96)
204 · LPBF Travel	43.56	3,235.00	(3,191.44)
205 · LPBF Other (Sub-Grantees)	17,496.89	97,545.00	(80,048.11)
206 · LPBF Professional Services	0.00	5,000.00	(5,000.00)
207 · Supplies/Equip(less than)\$5,000	0.00	11,293.00	(11,293.00)
208 · LPBF Contractual	3,346.16	159,917.00	(156,570.84)
Total Expense	36,698.83	412,733.00	(376,034.17)
Net Ordinary Income	0.00	0.00	0.00
Net Income	0.00	0.00	0.00

* Note: Withdrawal from ASAP.gov for expenses incurred through Sep 30 2019, will be initiated in Nov 2019.

Attachment A

ADMINISTRATION: GOMP PONCHITOLAWA MX00D68218-0

	2019										2020										2021										2022																	
Timeline/Milestones	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D			
QAPP Developed; Approved	x	x	x	x	x	x	x	x	x														*																									
PHASES											PH I - begins 3-1-20										PH II begins 3-1-21										III																	
Site Reconnaissance (all partners); Set Ph I & II priorities; Ph III synthesis									x	x	x										x	x	x														x	x	x	x	x	x						
Subawardee Invoices 10% ea: Contract & Closeout		x																																												x		
Subawardee Progress Rpt Due by the 15th for prior month				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Subawardee Invoice due 5th of "X" month for 3 mo. prior							x			x			x			x			x			x				x			x			x			x			x			x							
IF COMPLETE, BRADY SUBMITS INVOICES FOR PYMNT BY THE 10TH							x				x			x				x				x				x				x				x				x								x		
6 Mo. Reporting Periods; LPBF report to EPA end of month "X"	3/01 - 8/31				9/01 to 2/28					3/01 to 8/31					9/01 to 2/28					3/01 to 8/31					9/01 to 2/28					3/01 to 8/31																		
LPBF Submits Final Reports to EPA-GOMP by 10-31-22; close-out by 12-31-22																																														x	x	x

* current project end date

TIMELINE/MILESTONES	2019									2020									2021									2022																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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* current project end date



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Cooperative Agreement Number: MX-00D68218-0

Dates covered by this report: April 1, 2018 to September 30, 2018

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.

LPBF submitted a grant application to EPA Gulf of Mexico Program 8-4-17 which contained subawards in the project budget. On 3-12-18, LPBF received the Notice of Award for grant # MX-00D68218 and subsequently received approval from Project Office Danny Wiegand to do Fixed Amount Subawards. As of 9-12-18, LPBF has been developing and implementing systems for conducting due diligence on three subawardees, planning appropriate deliverables and reporting methods for proper monitoring, and planning to request a budget revision to consolidate the work planned by two subawardees to a more efficient and cost-effective subaward with a different institution of higher education.

Pursuant to 2 CFR 200, by accepting a grant from EPA that includes any subaward, LPBF is certifying that it has systems in place to comply with the 14 requirements of EPA's *National Term and Condition for Subawards* or will refrain from making subawards until the systems are designed and implemented. LPBF is following EPA policy contained in: https://www.epa.gov/sites/production/files/2016-02/documents/grants_policy_issuance_gpi_16_01.pdf. Additional EPA guidance was issued 8-22-18 (<https://www.epa.gov/grants/rain-2018-g03>) concerning transactions unrelated to LPBF's scope of work.

In EPA's *National Term and Condition for Subawards*, requirements 1-7 are most applicable to LPBF's needs and capabilities developed to date:

- During preparation of the subject grant proposal in July 2018, LPBF established its capacity to differentiate between subrecipients and contractors, consistent with 2 CFR 200.330 & 200.331. A new policy for LPBF's policy manual has been drafted (requirement 1).

- Following proposal submission, LPBF designed its own questionnaire for planned subawardees to complete. It concerned eight topics that addressed unique entity identifiers, compliance with federal regulations, evaluating risks of noncompliance, and deciding whether to impose additional requirements (requirements 3, 4, 5, 6). LPBF completed evaluation of two planned subawardees' responses.
- Following receipt of the Notice of Award, LPBF prepared subawardee contracts, following EPA's Subaward Agreement Template, and in consultation with LPBF's legal counsel. Subsequently, LPBF changed to the Federal Demonstration Partnership (FDP) Fixed Price Research Subaward Agreement template (requirement 2).
- LPBF is presently modifying and expanding the timeline for project implementation, which is central to monitoring subrecipient performance/subrecipient preparation of performance reports (requirement 7).

Overall, LPBF benefited from recently purchasing information and participating in the 90-minute webinar: *Subrecipient Monitoring and Management: Nonprofit Success Under 2 CFR 200*. Hosted by NonProfit WebAdvisor and recorded on 8-23-18, it was led by Rex L. Porter, principal and founder of Porter Group LLC, a premier national federal grant funding and compliance consultant service that serves nonprofits across the country. During his 25-year career in federal grants management, Rex has served as a federal grants official, grant-funded organization executive director, and local government project manager. His current practice supports nonprofits and local governments staying compliant with the ever-changing and complex world of federal grant rules.

LPBF has also completed an initial draft Quality Assurance Project Plan document, however, the final iteration of the document is contingent upon finalizing the subaward agreements. During the reporting period, LPBF has reached an agreement with Tulane University in a Memorandum of Understanding. This document is attached as *Attachment A*.

2. Were any problems encountered? If yes, please describe corrective actions taken.

The realization of opportunities to improve project execution occurred during the competitive bid process conducted for the community engagement portion of the project. Tulane University was chosen as the successful bidder to complete Task 3 scope of work. The university also possesses the analytical capabilities to assess waterborne pathogens and vectors of human diseases in a location close to the project site. LPBF staff can readily provide to the university the water samples for analyses, prepared in conformance with the protocols in the Quality Assurance Project Plan (QAPP) under development at this time, as shown in the draft QAAP (*Attachment B*). Because Tulane University and LPBF can cooperatively fulfill the roles of two planned subawardees (University of Alabama and Georgia Institute of Technology), changes to the categories of "Contractual" and "Other" are requested. The total project budget continues to be \$412,733, as awarded, and the changes are solely in those two line items, as shown in the proposed budget revision (*Attachment C*).

3. Is the project work on schedule?

To accommodate changing subawardees, a six-month, no-cost extension is requested due to changes in the project timeline (*Attachment D*). Such an extension would change the end of the project from 2-28-2021 to 08-31-2021. LPBF is eager to continue implementation of the project following submission, review and approval of the final QAPP.

The request in project extension is to allow additional time for the execution of the subaward agreements and finalization of project QA documentation. LPBF does not anticipate the requested extension will interfere with collection of data related to the project, as mosquito activity is approaching the quiescence of winter. The Foundations objective is to finalize the agreements over the fall, so that a field assessment can be performed in January, with project sampling activities ready to begin in February.

4. Document any changes in project management (personnel) and provide the updated contact information.

No changes in project management at LPBF have occurred.

5. Outline the work projected for the next reporting period.

LPBF will be conducting the following work in the next reporting period:

- LPBF will be finalizing subaward agreements with Tulane University in the first portion of October. Upon execution of subaward agreements, LPBF will submit the QAPP for review by the EPA Gulf of Mexico Program.
- A field assessment of targeted areas will be performed, including the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water. Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose the ten (10) neighborhoods for further ("Phase I") analysis.
- Phase I assessments of target areas will also begin, including background data for the pathogen indicators (fecal coliform), adult and larvae mosquito populations, and a suite of enteric pathogens

Financial Report
Budget to Actual
For the Period of April 01, 2018 – August 31, 2018*

	<u>Apr - Aug 18</u>	<u>Budget</u>	<u>\$ Over/(\$Under) Budget</u>
Ordinary Income/Expense			
Income			
304 · LPBF Grants & Contracts	<u>8,724.18</u>	<u>412,733.00</u>	<u>(404,008.82)</u>
Total Income	<u>8,724.18</u>	<u>412,733.00</u>	<u>(404,008.82)</u>
Expense			
201 · LPBF Salary & Wages	3,950.79	97,976.00	(94,025.21)
202 · LPBF Fringe Benefits	723.54	18,172.00	(17,448.46)
203 · LPBF Indirect	790.18	19,595.00	(18,804.82)
204 · LPBF Travel	11.93	3,235.00	(3,223.07)
205 · LPBF Operating (Other)	0.00	97,545.00	(97,545.00)
206 · LPBF Professional Services	0.00	5,000.00	(5,000.00)
207 · Supplies/Equip(less than)\$5,000	0.00	11,293.00	(11,293.00)
208 · LPBF Contractual	<u>3,247.74</u>	<u>159,917.00</u>	<u>(156,669.26)</u>
Total Expense	<u>8,724.18</u>	<u>412,733.00</u>	<u>(404,008.82)</u>
Net Ordinary Income	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Net Income	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>

*Note: The Accounting Period of Sep 2018 is closed out during the month of October 2018. The monthly close is the process of recording payroll, accounts payable, expense, revenue, and deposit transactions by the 10th of the following month. Subsequent to the 10th of the month, monthly government cost reports are compiled, recorded, and submitted.

Attachment A

MEMORANDUM OF UNDERSTANDING

This **Memorandum of Understanding** ("**MOU**") is made and entered into this 25th day of July, 2018 (the "**Effective Date**") by and among **The Lake Pontchartrain Basin Foundation** ("**Foundation**" or "**LPBF**"), a 501(c)(3) not-for-profit, non-governmental organization located in Louisiana and having an address at 2045 Lakeshore Drive, Suite 339, New Orleans, LA 70122 and **The Administrators of the Tulane Educational Fund d.b.a Tulane University through the Tulane School of Public Health and Tropical Medicine** ("**Tulane**") that is a not-for-profit company located at 1440 Canal Street, New Orleans, Louisiana, 70112 (Tulane and Foundation collectively are referred to as the "**Parties**") who enter into this MOU consistent with the terms, conditions and mutual covenants as set forth below:

RECITALS

WHEREAS, both Parties acknowledge the importance of establishing cultural, educational, and scientific relations in order to further their institutional aims; and

WHEREAS, both Parties share a common interest in developing education, research and learning in various fields; and

WHEREAS, it is in the best interest each Party to obtain the assistance of the other Party in the pursuit of the objectives and goals enumerated in this MOU; and

WHEREAS, the Parties possess the facilities and personnel necessary to pursue the objectives and fulfill the requirements of this MOU; and

NOW, THEREFORE, in consideration of the foregoing premises and the terms and conditions contained in this MOU, the Parties agree as follows:

ARTICLE 1

SCOPE & PURPOSE

1.1 PURPOSE. It is in the interest of the Parties to explore possible collaborations on curriculum development, teaching, research projects and exchanges of faculty, staff, students, information and experiences in several areas of public health. This MOU will facilitate increased cooperation between Foundation and Tulane for the purpose of facilitating collaborating in current and future funded projects, and to assist in identifying and evaluating other opportunities that would improve public health for the residents of the Pontchartrain Basin.

1.2 SCOPE. Tulane and Foundation desire to promote the following activity, which may be formally developed by means of a separate legally binding agreement between the Parties:

- I. Through this MOU, Tulane and the Foundation intend to collaborate to enhance awareness of community partnership opportunities in the New Orleans and surrounding areas highlighting efforts to protect public health. The Parties recognize that there are many possible areas in which enhanced cooperation could be beneficial and therefore may agree to work to enhance cooperation in other areas without amending this MOU;
- II. Explore possible collaborations on curriculum development, teaching, research projects and exchanges of information and experiences in several areas of public health;
- III. Seek to improve understanding between their respective institutions and to establish mutually beneficial collaborations benefiting their students, scholars, faculty, and employees; and

IV. Enhance coordination, when applicable and appropriate, in the areas of water quality, habitat restoration, community resilience, environmental education, and environmental justice.

1.3 **FUNDING.** The Parties acknowledge that this MOU does not in and of itself effectuate the transfer of monies between the Parties, and, as such, the Parties acknowledge and agree to enter into additional legally binding agreements as desired and appropriate on an activity-specific basis.

1.4 **COMPLIANCE.** Tulane and Foundation agree to conduct all activities undertaken pursuant to this MOU in accordance with all applicable federal, state and local laws, regulations, and guidance.

ARTICLE 2

TERM OF MOU

2.1 The term of this MOU shall be three (3) years ("Term"), commencing on the Effective. The MOU shall renew upon the express written consent of both Parties. At any given time, any Party may, in its sole discretion, terminate this MOU with or without cause by giving the other Party at least sixty (60) days' prior written notice.

ARTICLE 3

RELATIONSHIP OF PARTIES

3.1 It is expressly understood and agreed that, in the performance of activities contemplated by this MOU, Foundation and Tulane will at all times act as independent contractors with respect to each other, and not as an employee, agent, or faculty member of one another. Nothing contained in this MOU will be construed to create a joint venture, partnership, association, or other affiliation or like relationship between the Parties. In no event will the Parties be liable for the debts or obligations of one another, except as otherwise specifically provided in this MOU.

ARTICLE 4

MISCELLANEOUS PROVISIONS

4.1 **ENTIRE MOU; MODIFICATION.** This MOU contains the entire understanding of the Parties with respect to the subject matter hereof and supercedes all prior MOUs, oral or written, and all other communications between the Parties relating to such subject matter. This MOU may not be amended or modified except by mutual written agreement among the Parties.

4.2 **NOTICE.** Any notice required to be given under this Agreement by either Party will be in writing and sent to the other Party by either hand delivery or certified mail return receipt requested as follows:

If to Tulane:

Thomas LaVeist
Dean, Tulane School of Public
Health and Tropical Medicine
1440 Canal Street
New Orleans, LA 70112

With copy to:

Victoria Johnson, General Counsel
Tulane University
300 Gibson Hall
New Orleans, LA 70118

If to Foundation:

Kristi Trail, P.E.
Executive Director
Lake Pontchartrain Basin Foundation
PO Box 6965
Metairie, LA 70009

With copy to:

Stephen Conroy, General Counsel.
Conroy Law Firm
Three Lakeway Center
3838 N. Causeway Blvd., STE 3130
Metairie, LA 70002

4.3 LIAISONS. To facilitate communications between the Parties, each Party will designate an individual to serve as a primary contact and otherwise liaise with the other Party:

For Foundation:

Name: Brady K. Skaggs, Ph.D.
Title: Water Quality Program Director
E-mail: brady@saveourlake.org
Phone: (504) 442-3602

For Tulane:

Name: Maureen Lichtveld, M.D.
Title: Chair, GEHS
E-Mail: mlichtve@tulane.edu
Phone: (504) 988-5953

4.4 COUNTERPARTS. This MOU may be executed in one or more counterparts, all of which together shall constitute only one MOU.

IN WITNESS WHEREOF the Parties have executed this MOU in two originals in equal meaning and content and the Parties agree that this MOU represents their intention in relation to the activities described herein.

**THE LAKE PONTCHARTRAIN BASIN
FOUNDATION**

By: 

Name: Kristi Trail, P.E.

Title: Executive Director

Date: 07-25-2018

**THE ADMINISTRATORS OF THE TULANE
EDUCATIONAL FUND THROUGH THE
TULANE SCHOOL OF PUBLIC HEALTH
AND TROPICAL MEDICINE**

By: 

Name: LuAnn E. White, PhD, DABT

Title: Senior Associate Dean

Date: 07-25-18

Attachment B

**INTEGRATED WASTEWATER-CENTRIC APPROACH TO WATER
QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT:
ASSESSING RESIDENTIAL AERATED TREATMENT UNITS, PRESENCE
OF WATERBORNE PATHOGENS AND MOSQUITO ACTIVITY - QAPP**

Brady Skaggs, Ph.D.
Principal Investigator
Water Quality Program Director

Lake Pontchartrain Basin Foundation
Pontchartrain Beach Office
2045 Lakeshore Drive, Suite 339
New Orleans, LA 70122

Prepared August 10, 2018

Project Approval (A1)

Signature _____ Date _____

EPA Project Officer: Danny Wiegand

Signature _____ Date _____

LPBF Executive Director: Kristi Trail, P.E.

Signature _____ Date _____

LPBF Water Quality Program Director: Brady Skaggs, Ph.D., MSPH

Signature _____ Date _____

Quality Assurance Manager, LPBF: Theryn Henkel, Ph.D.

Signature _____ Date _____

STPMAD PI: Kevin Caillouet, Ph.D., MSPH

Signature _____ Date _____

Tulane University PI: Maureen Lichtveld, M.D., MPH

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Distribution List (A3)

U.S. Environmental Protection Agency
Gulf of Mexico Program
2510 14th Street, Suite 1212
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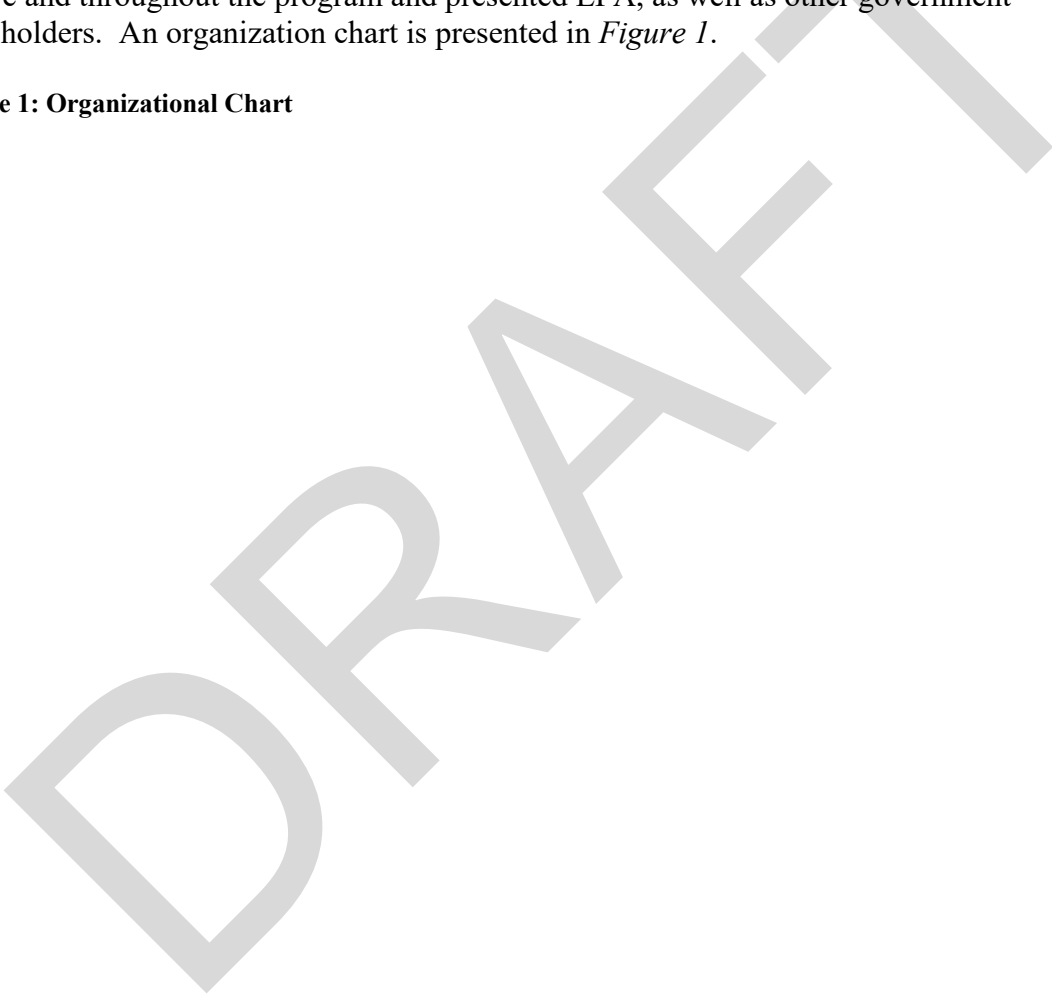
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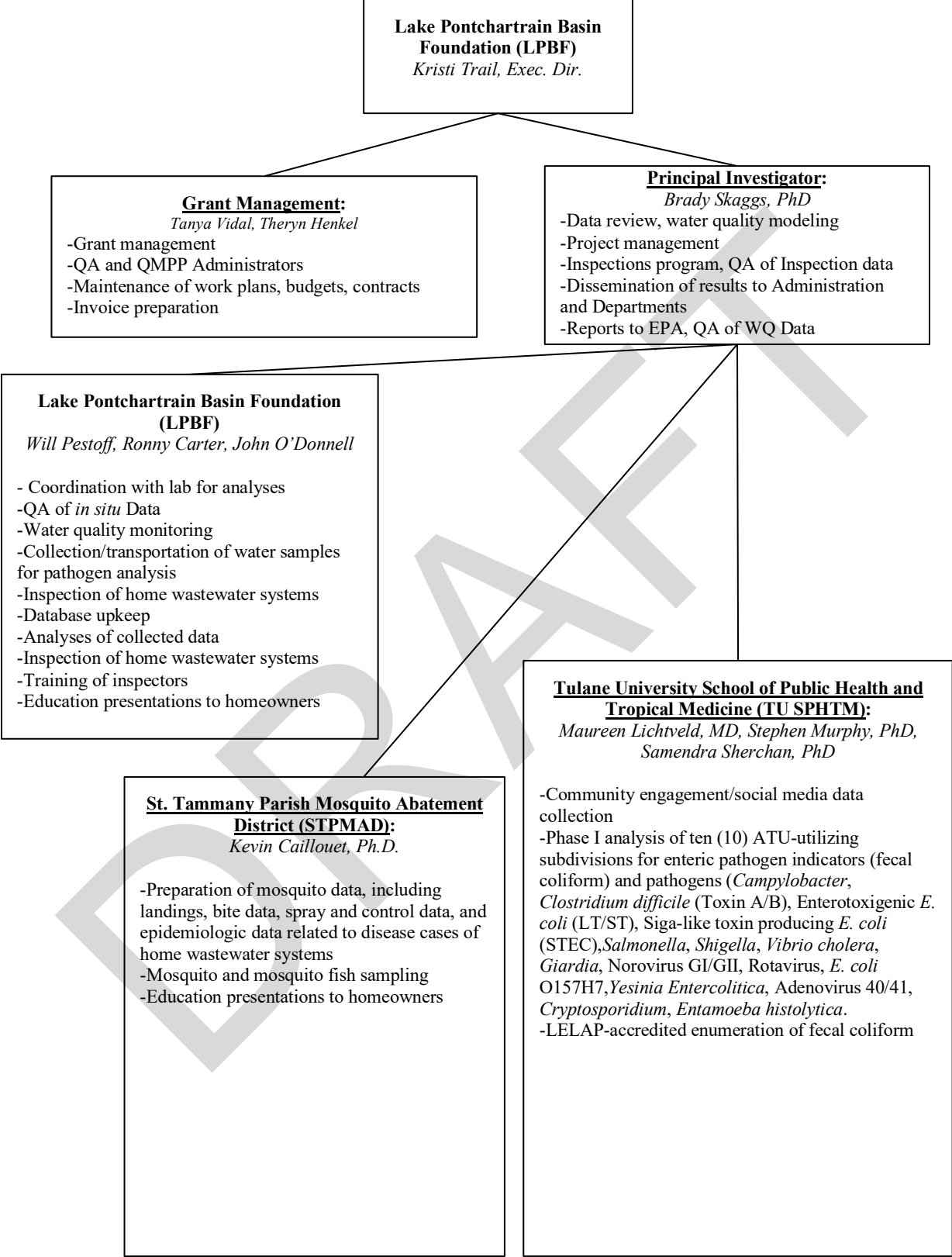
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- Stephen Murphy, Ph.D. MPH, MBA, Assistant Professor
- Samendra Sherchan, Ph.D., REHS, Assistant Professor
- Mya Sherman, Research and Program Manager
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Project/Task Organization (A4)

The Lake Pontchartrain Basin Foundation (LPBF) will work with St. Tammany Parish Mosquito Abatement District (STPMAD) and Tulane University School of Public Health and Tropical Medicine (STPMAD) to assess water quality conditions before, during, and following an intensive program to correct wastewater issues in the Ponchitolawa Creek Watershed near Covington and Mandeville, Louisiana. The LPBF will be responsible for water quality sampling, data storage, analysis, and quality assurance, and overall sampling logistics of the project. An EPA/LELAP- approved lab will conduct the nutrient, organics, and microbiological analysis and report the results to the LPBF. The collected data will be analyzed to assess water quality before and throughout the program and presented EPA, as well as other government stakeholders. An organization chart is presented in *Figure 1*.

Figure 1: Organizational Chart





Problem Definition/Background (A5)

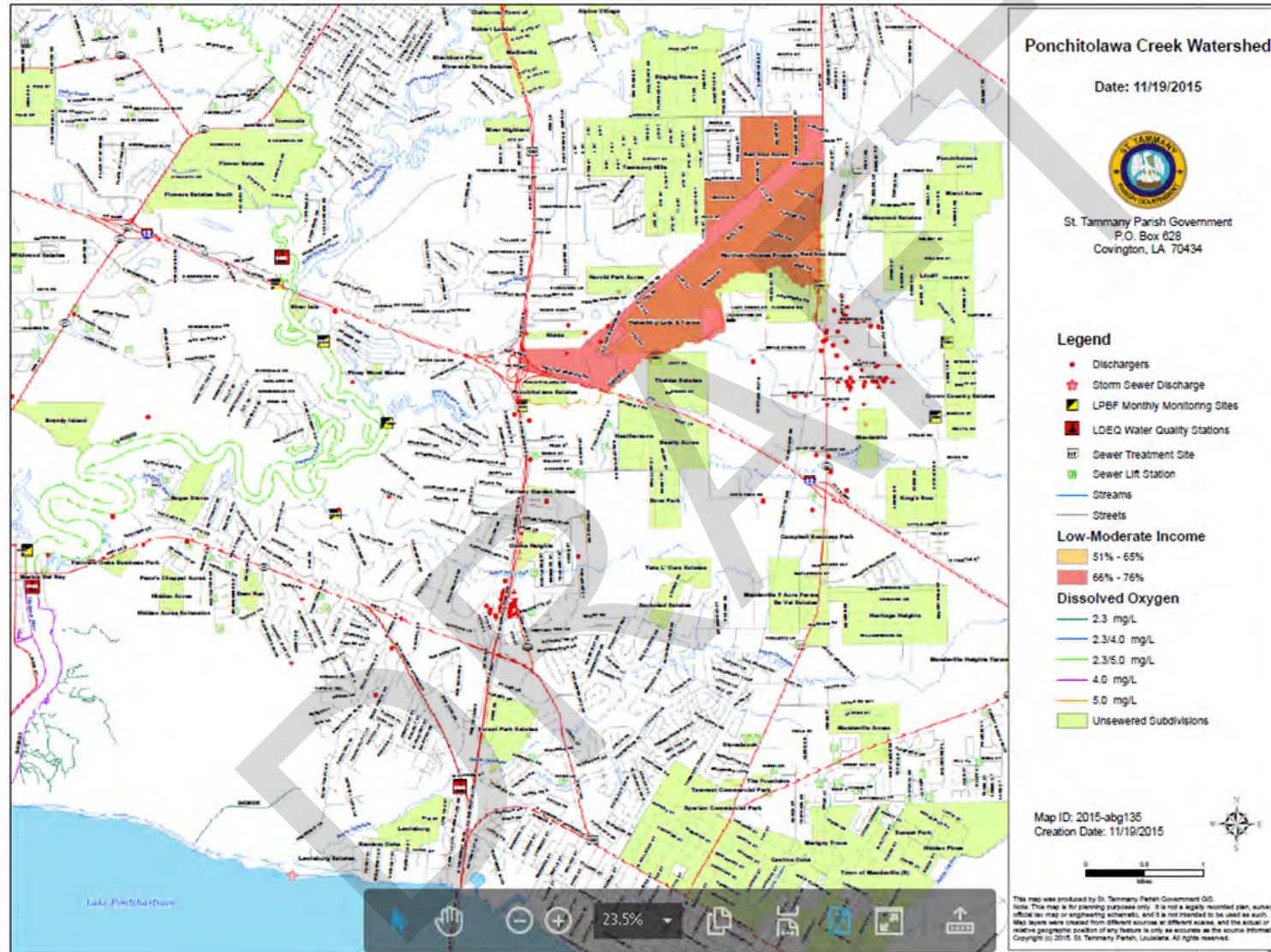
St. Tammany Parish, on the north shore of Lake Pontchartrain in southeast Louisiana, is a rapidly developing region of the Lake Pontchartrain Basin. Several major rivers of the Pontchartrain Basin run through this region and have felt the effects of accelerated urban development. The building of homes, subdivisions, and private and commercial developments has introduced various types of pollutants into the rivers. As a consequence, many of the stream segments in St. Tammany Parish have been listed on EPA's §303(d) List of Impaired with TMDLs completed for low dissolved oxygen (DO) and bacterial constituents.

The proposed project area, Ponchitolawa Creek Watershed, drains approximately 9,441 acres in St. Tammany Parish and is a tributary of the Lower Tchefuncte River, which flows into Lake Pontchartrain (Figure 1). As a direct tributary of the Tchefuncte River, Ponchitolawa Creek is designated a Scenic River by the Louisiana Legislature and the Louisiana Department of Wildlife and Fisheries (LDWF) and is considered an Outstanding Natural Resource Water (ONRW) by the Louisiana Department of Environmental Quality (LDEQ). As the Ponchitolawa Creek traverses the urban landscape, it passes through many neighborhoods, including several considered "Low-to-Moderate-Income" (LMI). The Ponchitolawa is on the EPA and LDEQ's 303(d) list for Biochemical Oxygen Demand (BOD) resulting in low dissolved oxygen (DO). The waterbody is failing to maintain water quality that is sufficient for fish and wildlife habitat (aquatic life use). In its Total Maximum Daily Load (TMDL) for BOD, the USEPA and LDEQ have determined that the primary cause is failing homeowner sewerage treatment units that discharge into ditches and are flushed into the stream during regular rainfall events.

The Ponchitolawa Creek watershed currently contains 24 sewerage subdivisions, 20 subdivisions with individual home sewage systems, and individual sewage systems at businesses and residences that are not in designated neighborhoods. Per the TMDL, the load reduction necessary to meet the 5.0 mg/L DO standard is approximately 97.91% in the segment near its confluence with the Tchefuncte River. The Tchefuncte River downstream of the confluence with Ponchitolawa Creek shows BOD, nutrient and fecal coliform impairments. Ponchitolawa Creek has not been tested for bacterial counts, but it is suspected of contributing a significant load of fecal coliform bacteria, BOD and nutrients into the Tchefuncte River.

As shown in *Figure 2* the LDEQ has an Ambient Water Quality Monitoring (WQM) site downstream of the confluence of the Ponchitolawa Creek with the Tchefuncte River. The site is sampled monthly for 29 parameters; all data is available online monthly on LDEQ's website. St. Tammany Parish with LPBF have previously investigated *in situ* stream monitoring for dissolved oxygen and various other regulatory and habitat parameters. Home ATU systems have a high failure rate nationally, and LPBF has observed neighborhood failure rates exceeding the national average greater than 60% of the installed systems. Louisiana's topography and geological conditions, when coupled with failed systems, can lead to stagnating, untreated wastewater in drainage ditches in homeowners' front yards. Fecal coliform, as an enteric pathogen indicator, can be measured to quantify the presence of fecal waste material from warm-blooded animals and sewage pollution. However, the scientific literature casts doubt that fecal coliform may be a sufficient indicator to warn of the presence of disease-causing enteric pathogens for all environmental conditions. This public health problem merits examination in Louisiana.

Figure 2: Ponchitolawa Creek Watershed with LMI, LDEQ Ambient WQMS and STP Monitoring Sites



Effluent produced by improperly maintained ATUs discharging into drainage ditches may enhance mosquito production, and therefore, the possibility of increased pathogen transmission by mosquitoes. Frequently malfunctioning residential ATUs and open, poorly-draining ditches together exacerbate the production of West Nile Virus (WNV) vector mosquitoes.

Past LPBF research has shown a high percentage of home wastewater systems to be malfunctioning in the project area. In addition, recent LDEQ monthly water quality monitoring on Ponchitolawa Creek (2013-2016) has shown sites at I-12 and at Hwy 59 do not meet new Use and Attainability Analysis (UAA) Dissolved Oxygen (DO) criteria applicable to this area. Louisiana Department of Environmental Quality ambient water quality monitoring data will serve as the baseline for this project.

To improve water quality in intervention neighborhoods, this project's multi-disciplinary approach will remediate pollution sources, determine whether disease-causing agents are present in standing water; monitor dissolved oxygen and fecal coliform; quantify changes in mosquito populations; and increase the capacity of homeowners and community leaders to embrace their wastewater responsibilities.

Project/Task Description (A6)

Project partners are the Lake Pontchartrain Basin Foundation, with 17 years' experience in wastewater management and 28 years' experience overall improving water quality in southeast Louisiana; the St. Tammany Parish Mosquito Abatement District (STPMAD), with vector-borne disease ecology and mosquito control; and Tulane University School of Public Health and Tropical Medicine (TU SPHTM) with emphasis on wastewater and sanitation engineering challenges; and detection methods for waterborne pathogens affecting human health.

Project and Objectives

The objectives of this project are:

1. To inspect home wastewater systems in the Ponchitolawa Creek watershed, instruct homeowners on proper operation and maintenance of their systems, and work to repair or replace systems if needed.
2. To sample and quantify pathogenic and bacteriological indicators, organic, and nutrient removal and other water quality benefits resulting from improved wastewater system performance and discharges from Ponchitolawa Creek (PC).

Sampling Locations

St. Tammany Parish and LPBF established ten (10) representative water quality test sites:

- Project partners will assess the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water. Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose the ten (10) neighborhoods for further ("Phase I") analysis.
- All sites are established with GPS coordinates. Sites and their respective GPS coordinates are illustrated in *Figure 3* of this QAPP.

- All Sites will be sampled from the middle of the stream and below the surface of the water. Currently, each site is reachable by hand but if necessary a pole or telescoping grab sampler will be used to achieve accurate collection of a subsurface water sample.

Phase I Data Collection: Upon approval of the QAPP, LPBF will conduct sampling at the ten sites described above over the course of ten (10) monthly occasions:

- Collection of data from standing water sites in residential neighborhoods: fecal coliform bacteria counts; presence of waterborne pathogens; mosquito quantity/activity; and presence of mosquito-eating fish. The presence of immature (larvae and pupae) mosquitoes and fish predators and water quality parameters will be monitored for correlation with conditions of individual residence's sewage treatment system.
- STPMAD will sample adult mosquitoes to determine the production of adult mosquitoes. Emergence traps, designed to sample mosquitoes that reproduce in an aquatic habitat, and adult mosquito traps, which sample free-flying mosquito populations, will be used in this pre/post intervention study. In addition, water quality parameters and presence/absence of mosquito predators will be measured and noted.
- Collection of pathogenic data from the ten sites for the presence of gastrointestinal and other waterborne diseases, including: *Campylobacter*, *Clostridium difficile* (Toxin A/B), Enterotoxigenic *E. coli* (LT/ST), Siga-like toxin producing *E. coli* (STEC), *Salmonella*, *Shigella*, *Vibrio cholera*, *Giardia*, Norovirus GI/GII, Rotavirus, *E. coli* O157H7, *Yersinia Enterocolitica*, Adenovirus 40/41, *Cryptosporidium*, *Entamoeba histolytica*. Each site will be sampled ten (10) times, roughly monthly, over the course of a year.
- Concurrently, *in situ* monitoring will be conducted for Dissolved Oxygen, Specific Conductance, Water Temperature, pH, and Turbidity at the ten sites. The baseline data collection is critical to assess the effectiveness of the Inspection Program (before-and-after) and to quantify the improvement in discharge water quality from improved home wastewater system performance.
- All sampling will occur monthly during "dry weather"¹. Dry weather will be targeted to sample chronic (not rain related) discharges from the subdivision and their impact on the local waterbody.

Phase II Data Collection: LPBF will conduct home ATU inspections within neighborhood(s) targeted in Phase I. LPBF will coordinate with St. Tammany Parish to conduct inspections within the targeted neighborhood:

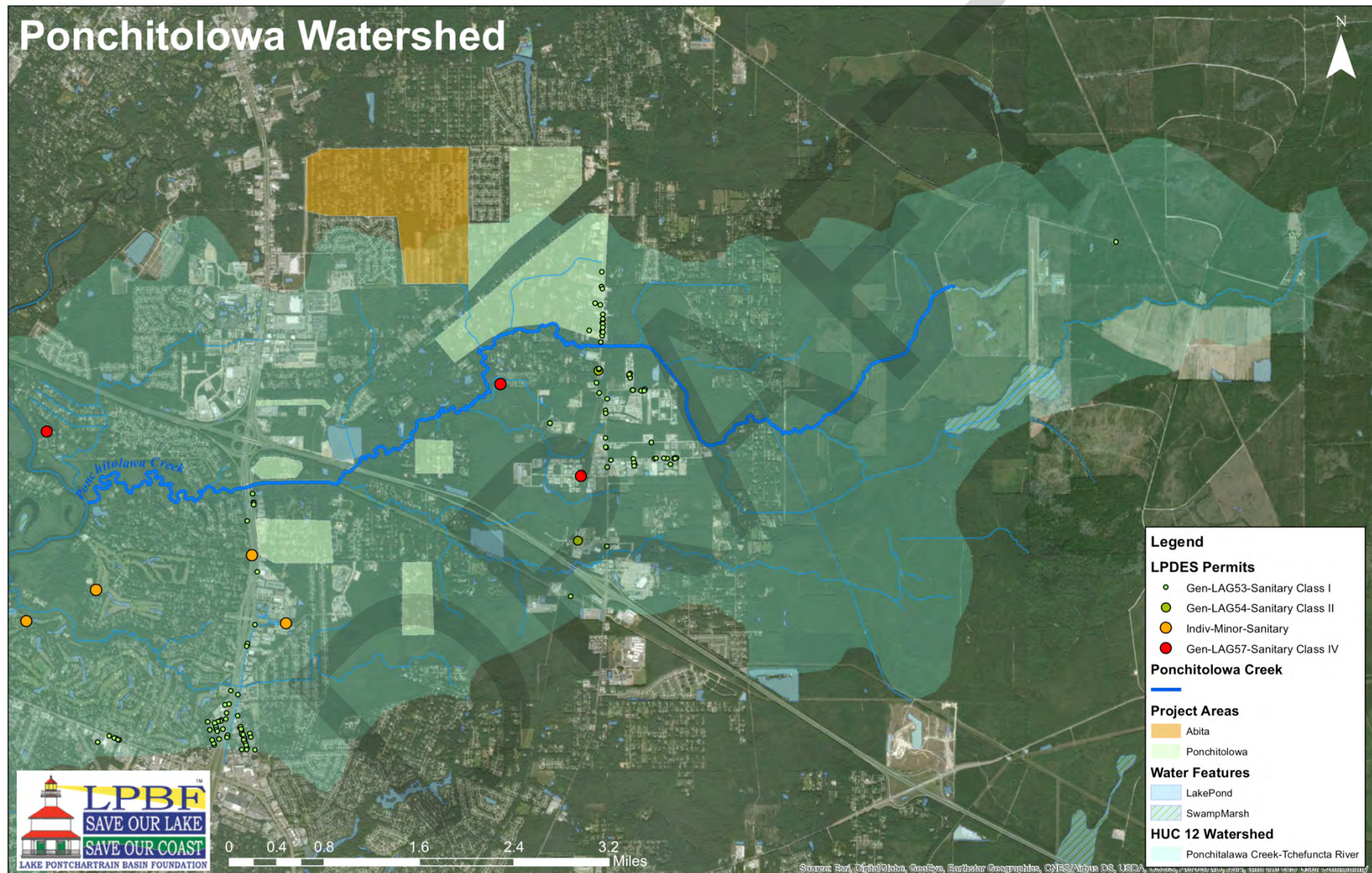
- LPBF will collect data for all inspected systems. Collection of information on the size and type of each system, condition of the system, street address, and GPS coordinates of the system's location. For Non-functional systems, copy of the inspection form will be given to the homeowner, and re-inspection will be conducted thirty days later. LPBF will conduct an approximate maximum of 100 ATU per month, for a total of 800-900 within the project.
- LPBF will monitor up to 10 sites monthly within the targeted neighborhood for water quality parameters (e.g.: fecal coliform, DO).
- TU SPHTM will re-conduct sampling detailed in Phase I to assess changes due to the intervention.
- In the selected intervention neighborhood(s) and in a similar neighborhood not scheduled for remediation (the control), STPMAD will sample adult mosquitoes prior to and after

¹ Dry weather is characterized as no precipitation for 72 hours prior to sample collection.

the intervention to determine the effect of the intervention on the production of adult mosquitoes. Emergence traps, designed to sample mosquitoes that reproduce in an aquatic habitat, and adult mosquito traps, which sample free-flying mosquito populations, will be used in this pre/post intervention study. In addition, the presence/absence of mosquito predators will be measured and noted.

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Figure 3: Water Quality Monitoring Sites



This QAPP, Integrated Wastewater-Centric Approach to Water Quality Improvement and Community Engagement: Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens and Mosquito Activity, addresses QA/QC requirements for this project. Two efforts, a laboratory effort analyzing nutrients, organics, and bacteriological parameters and one involving *in situ* measurement of the physiochemical parameters make up the testing regime. Quality assurance will be maintained through procedures documented in this QAPP and reported in semiannual reports made to EPA.

Quality Objectives for Measurement Data (A7)

The purpose of this project is to analyze data collected through water monitoring to quantify bacteriological or pathogenic removal and other water quality benefits resulting from improved wastewater system performance and discharges from Ponchitolawa Creek in St. Tammany Parish, LA. Observing and recording the behavior of the actual system through the data collected as described in this QA/QC plan will accomplish this purpose. For each site, all parameters will be measured a total of ten (10) times in one year for two years.

Figure 3 (page 15) is a representative data sheet to be used for field data collection. All water quality sample collection, sample handling, analytical methods, and *in situ* monitoring methods to be performed in the water quality sampling regime will be in accordance with the *Standard Methods for the Examination of Water and Wastewater*, 23rd Ed (2017).

Mosquito larvae will be identified with presence and absence sampling, as identified in *Mosquito Ecology Field Sampling Methods* (Third Edition, author Silver). A logistic regression model will be used to predict environmental parameters that correlate with fish and mosquito presence. Categorical variables include mosquito and fish presence, inspection pass/fail, and whether ditch water is flowing or stagnant.

Fish presence will be measured by a thirty second visual inspection of the water surface in a one square meter area around the septic outfall pipe. If no outfall pipe is present, the one square meter observation area will be the nearest culvert opening. Presence-absence monitoring is a common measurement in fish ecology (Manel et al. 2001), and visual observations as population estimates are a standard referenced in *Biological Examination: Fishes*. Considering the shallow water present in ditches and the ease with which fish can be visually observed.

Information regarding the state of the site (i.e. trash/debris, wildlife, and recent weather), time of analysis, and the name of the person taking the measurements will also be recorded on each sampling date.

The EPA/LELAP-approved Microbiology Lab at Tulane University SPHTM University will conduct the analytical analyses required in this project in accordance with their quality management program.

Data will be stored in a Microsoft Excel database. It will be subjected to quality control and descriptive statistics as described in *Guidance for Data Quality Assessment* (EPA QA/G-9) using Microsoft Excel and SAS, SPSS, or similar statistical program.

- Statistical analyses of the data will be conducted semi-annually and at the end of the project. The semi-annual reporting period will be April 15th and October 15th.

- The quality assurance measure, relative percent difference (RPD), will be computed throughout for each parameter except turbidity at each site. The RPD data will be included in the final report.
- The Analysis of Variance (or non-parametric equivalent- Kruskal-Wallis analysis) and/or categorical data analysis will be employed to evaluate the statistical relationships between parameters. Probability of $\alpha \leq 0.05$ is considered of statistical significance with a null hypothesis stating no significant difference between parameters between baseline and post inspection sampling.
- Linear regression and moving averages will be used to assess change over time for individual parameters.
- Spearman's Rho will be utilized to assess correlative relationships between tested parameters vs. system repairs once again with the null hypothesis of no difference before or after.
- Summaries of the analyzed data and QA procedures will be presented in reports.
- The ultimate goal of the statistical analysis is to run regressions on the various parameters being tested for and determine if there are statistically significant reductions in any parameters between our background sampling and end of project sampling as well as over the course of the project, as they relate to 303(d) listing.
- The extensive list of parameters that will be monitored/sampled in the study are provided in *Section Project/Task Description (A6)* of the QAPP. Parameters of interest that will be utilized to demonstrate water quality improvement due to improved homeowner sewerage system performance will be: DO, turbidity, fecal coliform, *E.coli*, and the presence or absence of pathogenic indicators, mosquitos, and mosquito fish.
- These parameters will also be assessed to demonstrate significance of changes in:
 - "Success" would be achieved if 5% or greater improvement is demonstrated for the target parameters: DO and fecal coliform.
 - The correlative statistics will be run between the parameters of interest and the numbers of houses being inspected as well as systems fixed to verify that % reductions of parameters can be attributed to the work being done in Ponchitolawa Creek.
 - Ascertain the relationship between qualitative datasets (presence or absence of pathogenic indicators, mosquitos, and mosquito fish) as the result of the intervention program utilizing statistical assessments such as Monte Carlo method and Exact Fisher test.
- It is also a goal of the program to have the project and results published in a peer reviewed scientific/environmental journal.

Special Training Requirements (A8)

The water monitoring personnel conducting the analysis have been trained in the collection of the water samples to be submitted to the laboratory. The LPBF Water Quality Field Coordinator will conduct other general procedure training. The LPBF Principal Investigator and all staff collecting water quality samples have completed EPA's Quality Assurance Training. While no specific certification for water quality field data collection is required, LPBF will follow the *Policy to Assure the Competency of Organizations Generating Environmental Measurement Data Under Agency-Funded Assistance Agreements* (EPA, 2013).

Documentation and Records (A9)

All associated LPBF project personnel, STPMAD project personnel, and TU SPHTM will receive copies of this QAPP and subsequent updates/revisions. Water monitoring personnel will receive copies of the sampling standard operating procedure with all standard methods employed explained in full detail. Records maintained include the following: all data relating to sampling, analysis, and quality control; documentation on equipment upkeep and calibrations for preventative maintenance; documentation of errors and corrective actions; and all performance evaluations. Semiannual reports will be generated to assess progress of the project and address any technical difficulties, which may necessitate a change of the original project design. These Semiannual Reports will be submitted to EPA for review.

Documentation and records pertaining to the project will be maintained by LPBF electronically for at least 7 years after the close-out of the project. Backups of LPBF's entire shared network are kept both onsite (daily backup) and offsite (biweekly backup). When a file is archived, it is moved to a shared archive folder on the network, which is backed up offsite every two weeks. Archives are maintained indefinitely, until files are no longer needed.

Figure 4: Data Sheet

Water Quality Monitoring- Data Form

Monitors: _____
Date: _____ Time: _____
Recent Weather Conditions: _____

Site, Time, Turbidity	Water Temp	Dissolved Oxygen	Specific Conductance	pH
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				

Site, Time, Turbid	Water Temp	Dissolved O ₂	Spec Cond	pH
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				
Site:				
Time:				
Turbidity:				
Mean				

Calibration/Maintenance- Initial completed tasks Date: _____

- D.O. Tip Changed _____
 - Conductivity/Salinity Checked Against Distilled Water _____
 - pH Solutions Changed (7 and 10 buffers) _____
 - Turbidimeter checked with secondary standards _____

Readings marked on standards: _____
 Readings taken from turbidimeter: _____

Sampling Process Design (B1)

The experimental design and monitoring activities have been discussed in section A6. Sampling will begin with the approval of the QAPP. All project personnel have completed training. This project is for three years, so an adequate sample size will be attained for analyses.

- For each PC site, physiochemical, nutrient, organics, and bacteriological parameter analyses will be performed at ten (10) sites during Phase I and Phase II, for a total of 100 sample measurements in each Phase.

All parameter measurements will be analyzed according to *Standard Methods for the Examination of Water and Wastewater, 23rd Edition* (2017) or *Mosquito Ecology Field Sampling Methods, 3rd Edition* (2007).

Sampling Methods Requirements (B2)

Physiochemical Parameters

Dissolved Oxygen, Water Temperature, Specific Conductance, pH, and Turbidity will be measured *in situ*, by meters outlined in B4. All “meter” measurements will be taken immediately beneath the surface, as some sites are shallow. At each site, three measurements will be taken and averaged for each parameter as the daily value except for turbidity measured by the turbidimeter. For the turbidimeter the average function is utilized to average 10 readings. The LPBF Water Quality Field Coordinator will be responsible for coordination of analyses and corrective action if necessary.

Microbiological Analyses

Sampling methods requirements for all parameters collected for lab analysis are described in Table 1 below. Information in Table 1 is from *Table 1060:I. Summary of Special Sampling and Handling Requirements (Standard Methods, 2017)*.

Table 1: Sample Collection and Holding

<u>Parameter</u>	<u>Type of Sample</u>	<u>Sample Size</u>	<u>Holding Time</u>	<u>Holding Conditions</u>	<u>Other Instructions</u>
Fecal Coliform	grab	100 mL	6 hours	Cool, ≤6°	Add thiosulfate or other quenching agent if Chlorine is present
E.coli	grab	100 mL	6 hours	Cool, ≤6°	Add thiosulfate or other quenching agent if Chlorine is present

Samples will be collected in accordance with *Standard Methods for the Examination of Water and Wastewater Methods 1060B and 9060A*:

- Bacteriological samples will be collected in 120 ml vessels (sealed, sterilized, plastic water sampling bottles).
- In the case of non-sterile procedure or other sampling procedure failure, the collection bottle will be discarded and another will be labeled and employed.
- All samples will be stored in a cooled ice chest (< 8 °C, SM 9060 B) and transported to the lab within six hours of collection, in accordance with *Standard Methods for the Examination of Water and Wastewater Methods 1060C and 9060B*.

- Upon receipt of samples in the lab, the temperature of the samples is checked and all samples will either be processed immediately or placed in a refrigerator ($< 8^{\circ}\text{C}$) not to exceed two hours before processing.

Sample Handling (B3)

Physiochemical Parameters

All physiochemical measurements are to be performed *in situ*. Data will be recorded on the field data form (Figure 4).

Microbiological Analyses

Sample handling procedures for microbiological, nutrient, and organics analyses are presented in Section B2. Samples will be collected by the water monitoring personnel, delivered by him/her to the lab and personally handed to the appropriate lab personnel. Sample labeling, handling, and disposal within the lab will proceed in accordance with their quality assurance manual (QAM).

Analytical Methods Requirements (B4)

Physiochemical Parameters

The analytical methods to be employed for this study are summarized in this section (Table 2).

Table 2: Standard Methods for Parameters Tested

Parameter	Method	Equipment
Dissolved Oxygen	Standard Methods for Examination of Water and Wastewater, 22 nd Ed. method 4500-OG	YSI Pro 2030 Meter 0-20mg/L range, $\pm 0.2\text{mg/L}$ accuracy
Temperature	Standard Methods for Examination of Water and Wastewater, 22 nd Ed. method 2550B	YSI Pro 2030 Meter -5 to $+55^{\circ}\text{C}$ range, $\pm 0.3^{\circ}\text{C}$ accuracy
Specific Conductance	Standard Methods for Examination of Water and Wastewater, 22 nd Ed. method 2510B	YSI Pro 2030 Meter 0 to 200 mS/cm range, ± 0.1 mS/cm accuracy
Turbidity	Standard Methods for Examination of Water and Wastewater, 22 nd Ed. method 2130 B	Hach Portable Turbidimeter 0 to 1000 NTU range, ± 0.01 NTU accuracy
pH	Standard Methods for Examination of Water and Wastewater, 22 nd Ed. method 4500-H ⁺ B	YSI pH 10A pH/ Temperature Pen 0 to 14.00 range, ± 0.02 pH ± 1 LSD accuracy

Microbiological Analysis

Fecal coliform and *Escherichia coli* are the bacteria examined as indicators for the enteric pathogen level. Fecal coliform is utilized as it is the Louisiana standard and for the continuation of data from previous LDEQ analysis at Ambient monitoring stations.

- The lab will utilize Method 9223B (Enzyme Substrate Test, incubated at 44.5 ± 0.2 °C) for enumeration of fecal coliforms and *E. coli*, as detailed in *Standard Methods for the Examination of Water and Wastewater*, 23rd Ed. For this method, the detection limit is MPN 1/100ml.
- <INSERT SHERCHAN METHODOLOGY WHEN CONTRACT EXECUTED>

Quality Control Requirements (B5)

The quality control performed on a set of samples is dictated by the protocols of the individual methods. All quality control methodology and statistics are performed in accordance with: Methods 1020B&C, 1030A, the parameters' test methods in *Standard Methods for the Examination of Water and Wastewater*, the manufacturers' guides, and the *Guidance for Data Quality Assessment* (EPA QA/G-9). For general data error control triplicate sampling is employed for physiochemical parameters to produce a mean and relative percent difference value for each parameter at each site.

The lab will perform all of its quality control requirements in accordance with its QAM.

Field Replicates

Bi-annually a replicate water sample will be collected (sequentially, at the same location after sample collection) at one of the sampling sites and submitted to the laboratory as a blind sample. The replicate data will be utilized and analyzed as quality control values. In addition, all meter measurements are taken in triplicate at all sampling sites for QA purposes.

Field and Laboratory Blanks

Bi-annually one blank for fecal coliform will be collected by pouring distilled water into the collection bottle in the field and submitting it to the lab with the other samples. The QC goal is no growth in the sample, which would appear as <1.8 MPN on the data form. Laboratory blanks will be run under the lab's QA plan.

Matrix Spikes/ Spike Duplicates

Matrix Spikes/ Spike Duplicates are not necessary for the analysis of physiochemical parameters as all tests are conducted *in situ*. Matrix Spikes and Spike Duplicates associated with the collection and analysis for nutrients, organics, and bacteriological parameters are detailed in lab's QAM.

Analysis of Quality Control Data

Quality control data will be summarized in the final report and utilized to assess the overall precision, accuracy, and completeness of each method. For these methods, the precision and accuracy is assumed to approximate published values.

Assessing Data Precision, Accuracy, and Completeness

1. Precision

On each sampling date, three readings for each physiochemical parameter will be taken at each site. The triplicate data will be subjected to precision analysis. Precision will be expressed as the relative percent difference (RPD). Microsoft Excel will be used for these calculations.

$$RPD = (X^1 - X^2) / (X^1 + X^2 / 2) * (100)$$

Where X^1 and X^2 are maximum and minimum sample values from daily triplicate samples

2. Accuracy

Accuracy is a measure of the closeness an experimentally observed value and the actual value, the latter of which is determined by the analyst through the use of sample spikes, surrogates, or reference standards. Field meters will be considered to be giving accurate readings through calibration with NIST standards and equipment maintenance (as per correspondence with EPA technical rep.) See Calibration and Maintenance schedule (Table 2) below for upkeep activities.

3. Completeness

Completeness is the amount of valid data generated in relation to the total amount of data produced for a given analytical method. Valid data is defined as data with associate QA/QC measurements that fall within required values for the purpose of this study (Table 2). Data completeness goals for each parameter are also noted in Table 3.

Evaluation of Statistically Derived QA/QC Data

Data that has been generated for QA/QC purposes must be assessed to determine the ability of the equipment and personnel to generate reliable data. Microsoft Excel will be used for these calculations. The data completeness results will be notated in the final report for the program. Completeness goals are noted in Table 3 for each parameter.

Table 3: Criteria for QA/QC Field Parameters

Parameter	Relative % Difference	Standard Method	Completeness Goal
Dissolved Oxygen	10	Ref1/4500-OG	> 90% data/ year
Specific Conductance	5	Ref1/2510B	> 90% data/ year
Turbidity	10	Ref1/2130B	> 90% data/ year
Temperature	5	Ref1/2550B	> 90% data/ year
pH	5	Ref1/4500-H ⁺ B	> 90% data/ year

Microbiological, Nutrient, and Organics Analyses

All quality control requirements for the microbiological portion of this research will be conducted by the lab in accordance with their QAM.

Instrument/Equipment Testing, Inspection, and Maintenance Requirements (B6)

Physiochemical Parameters

All equipment and associated components will be inspected, calibrated, and tested by the Water Quality Field Coordinator upon receipt according to the operator's manual. Equipment will be maintained according to the operator's manuals. In the case of equipment failure, the piece of equipment will be sent to a reputable company for repairs. Equipment will be inspected, calibrated, and tested by the Water Quality Field Coordinator upon receipt. Back-ups for all equipment and spare parts are maintained by the LPBF. Water monitoring personnel perform routine maintenance on all equipment in accordance with the equipment operator's manuals.

Microbiological, Nutrient, and Organics Analyses

The lab tests, inspects, and maintains its own equipment in accordance with its QAM.

Instrument Calibration and Frequency (B7)

Physiochemical Parameters

Calibration protocols will be performed under the following conditions:

- 1) First use of an analytical instrument, component of the analytical instrument, or analytical method;
- 2) During the sample analysis procedure, as dictated by the methodology;
- 3) After instrument repair and/or maintenance;
- 4) After quality control check failure.

Additional calibration requirement and procedures recommended by the instrument manufacturers' will also be followed. All calibrations will be performed according to the operator's manual using standard solutions purchased from reputable suppliers (standardized against NIST-certified references). All calibrations will be performed in accordance with the procedures specified in the analytical methodology commanding their use (Table 4).

Table 4: Physiochemical Instruments Calibration/Maintenance Procedures

Equipment	Schedule	Procedure
Dissolved Oxygen Probe	Each Use/Weekly→ Monthly→ Bi-Annual→	- Calibrate to distilled water - Change tip and replace solution - Check against standard chart, - Clean anode & cathode
Salinity/Conductivity Meter	Bi-Annual/ Repair→ Monthly→	- Calibrate to one standard KCl solution - Check salinity against distilled water (0 ppt salinity)
Turbidity	Quarterly→ Monthly→	- Calibrate to formazin standard - Check against secondary standards
Thermometer	Bi-Annual→	- Check against similar probe
pH meter	Each Use/Weekly→ Monthly→	- Perform two point calibration - Change all buffers and solutions

Microbiological Analyses

The lab standardizes and calibrates all of its equipment in accordance with its QAM.

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Inspections/Acceptance Requirements for Supplies and Consumables (B8)

All equipment and supplies are purchased from reputable dealers. The Water Quality Field Coordinator logs the receipt of all new equipment and inspects, calibrates, and tests the equipment (as necessary) before accepting them. If equipment/supplies are damaged or do not pass calibration and testing, they will not be accepted. All supplies are handled and stored according to operator's instructions.

Microbiological, Nutrient, and Organics Analyses

During sample collection, the monitoring personnel will be responsible for inspection and acceptance of the sample containers. The lab will inspect its own consumables and supplies in accordance with their QAM.

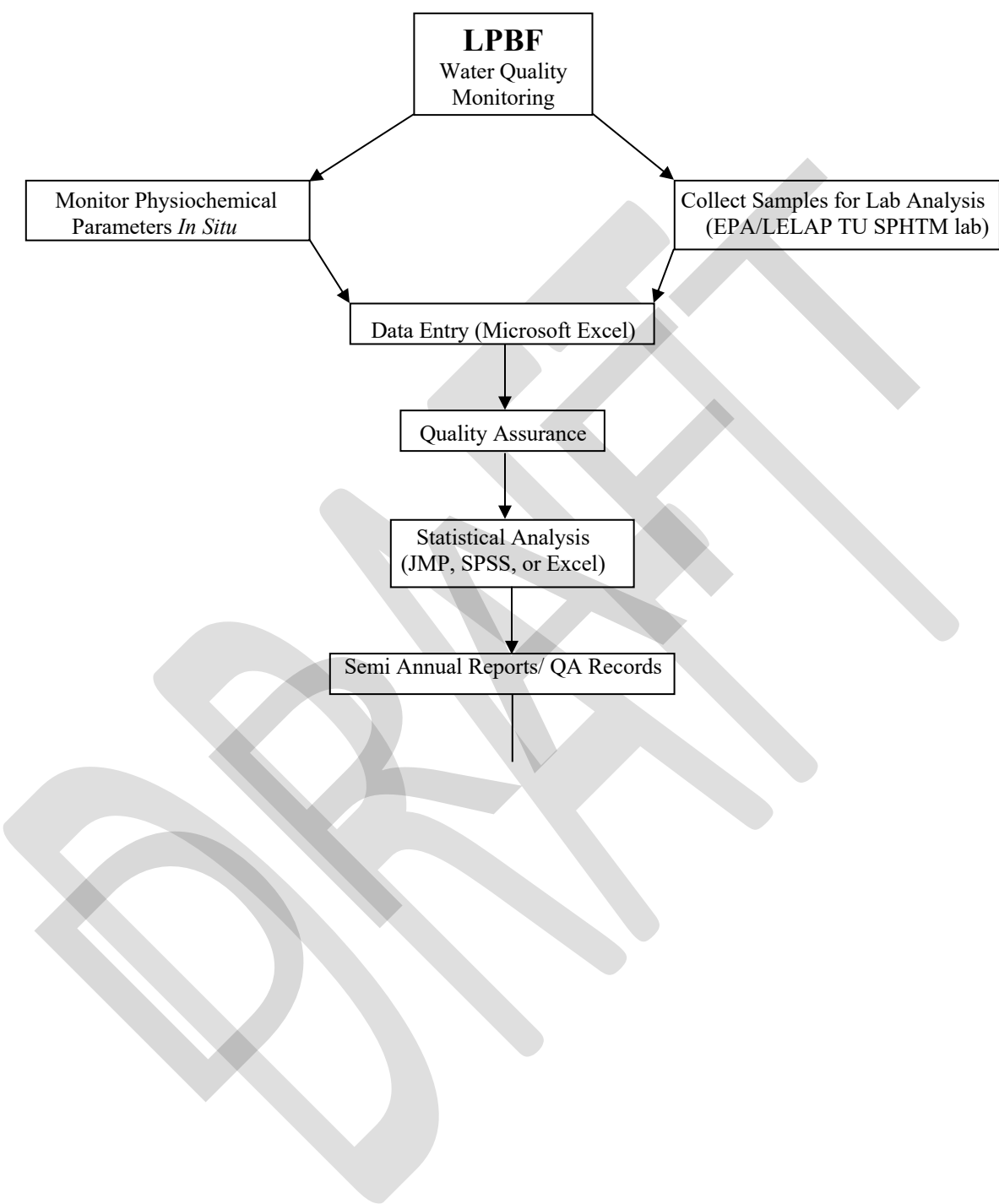
Non-Direct Measures (B9)

There are no non-direct measures used in this research.

Data Management (B10)

Data management follows the chart below, in *Figure 4*. The results of all monitoring and analyses will be put into a database by the LPBF monitoring personnel. Microsoft Excel JMP, SAS, SPSS, or other appropriate statistical program will be utilized for statistical analysis. All activities will be performed by LPBF, and will be reported to EPA.

Figure 5: Data Management Flow Chart



Assessment and Response Actions (C1)

Assessment activities needed for this project include performance evaluations, performance reviews, and peer review. The LPBF Water Quality Program Director (Principal Investigator) and LPBF Water Quality Field Coordinator will be in constant contact with the LPBF monitoring staff to resolve issues as they arise. In addition, all data will be subject to QA review, which will be summarized in the final report. The lab will conduct its own assessment of its methodology in accordance with its QAM.

Performance Evaluation

Monitoring personnel are evaluated for their knowledge and ability to carry out the required measurements. The monitor for this project has already been trained in water monitoring and sample collection methodology. Performance evaluations will be completed before project personnel are allowed to participate and repeated an additional time during the project. The Water Quality Field Coordinator and/or Principal Investigator will view the data monthly, upon receipt. If any issues arise, the Principal Investigator will work with the monitor to resolve the issues.

Performance Reviews

Performance reviews will be conducted to document the taking of measurements and the treatment of data from time of collection to final reporting of results at least once per year. The primary goal of the review will be to detect deviations from the standard operating procedures and to make corrective adjustments. The Principal Investigator will be responsible for implementing corrective procedures and monitoring the progress of the personnel.

Peer Review

Data quality will be evaluated by peer review through technical review conducted by Tulane University SPHTM and through information exchange and consultation with other research parties involved with similar projects. Publication of project results in peer reviewed scientific journal is desired.

Reports to Management (C2)

The following project reports will be prepared by LPBF and submitted to EPA Gulf of Mexico Program.

Progress Reports

Progress reports will be prepared by LPBF in accordance with grant work plans. Semi-annual project reports will share all data collected and analyzed to date, address any problems that may affect the quality of the data (including corrective actions performed), and be an evaluation of the status of the project. Semi-annual and final reports will summarize, analyze, and graph all project data to draw conclusions on the project and report all QA/QC findings.

Data Review, Verification, and Validation (D1)

A comprehensive review and verification of quality assurance elements will be conducted after data collection is complete including: assessment of data entry, transcription, and calculation errors; use of acceptable sampling methods; verification that holding times for those parameters analyzed by a lab were met; meters were properly calibrated for each use; use of correct containers and preservatives; verification that field blanks and duplicates were collected as planned and that they met aforementioned QC acceptance criteria; verification that the number of samples planned for collection were collected as planned; verification that sites listed for sampling were actually sampled; and verification that completeness goals were met for each parameter. Any departures from these types of project planning criteria listed in the QAPP will be noted in project reports.

Verification and Validation Methods (D2)

Section A7 discusses the responsibilities of LPBF in this study and Section B10 discusses the chain of custody for all accumulated data. The water monitoring personnel are responsible for verifying the completeness and correctness of the data through the custody and transferal process. The LPBF and the PI will perform the quality assurance and validation analysis to assure that the data complies with QA/QC criteria and that all instruments comply with operational standards.

The following data verification methods will be employed:

- 10% (or more) of field data sheets will be randomly compared with the database to verify correct data transcription.
- Sample delivery sheets will be checked to verify holding times and preservation requirements for microbiological samples.
- Calibration logs will be consulted to verify that meters were properly calibrated.
- Duplicates will be verified against precision targets listed in Table 2.
- Blanks will be verified against assessment criteria for field blanks described in Section B5.
- Number of samples collected will be compared to the total number originally planned for each parameter.
- Completeness (defined in Section A7) will be assessed using the following equation:
$$\text{Completeness} = (\text{Total valid samples} / \text{Total samples collected}) (100)$$
- Field data sheets will be reviewed to verify sampling locations were sampled as planned.
- Experimental controls that are not within limits and/or when duplicate samples vary significantly, the data will be rejected. Data acceptance will be the responsibility of the Principal Investigator.

Reconciliation with Data Quality Objectives (D3)

LPBF will reconcile the data with the quality assurance process outlined in the LPBF QMP. LPBF will verify that pertinent data results are acceptable by inter-comparison checks, performance evaluations, and evaluations as described previously in Section C1. Data that does not meet the data quality requirements will be rejected after review by the Principal Investigator.

Literature Cited

40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants; Analytical Methods for Biological Pollutants in Ambient Water; Final Rule*. Federal Register: July 21, 2003.

American Public Health Association, American Water Works Association, Water Environment Federation. 2017. *Standard Methods for the Examination of Water and Wastewater*, 23rd Ed. Washington D.C.

Guidance for Data Quality Assessment. EPA QA/G-9. March 1995.

Environmental Protection Agency. 2013. *Policy to Assure the Competency of Organizations Generating Environmental Measurement Data Under Agency-Funded Assistance Agreements*.
<https://www.epa.gov/sites/production/files/2015-03/documents/competency-policy-aaia-new.pdf>

Louisiana Department of Environmental Quality. 2004. *Environmental Regulatory Code Part IX: Water Quality Regulations*. September 2004 Supplement.

Louisiana Department of Environmental Quality, Water Quality Modeling Section/ TMDL Section. Feb 2nd, 2012. Final Lower Tchefuncte River Watershed TMDL for Biochemical Oxygen-Demanding Substances – Phase I, Subsegments 040802 and 040803. February 2nd, 2012), TMDL REPORT.
<http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=8320185&ob=yes>

Attachment C

This Workspace form is one of the forms you need to complete prior to submitting your Application Package. This form can be completed in its entirety offline using Adobe Reader. You can save your form by clicking the "Save" button and see any errors by clicking the "Check For Errors" button. In-progress and completed forms can be uploaded at any time to Grants.gov using the Workspace feature.

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OPPORTUNITY & PACKAGE DETAILS:

Opportunity Number:	EPA-GM-COOPERATIVE-AGREEMENTS-2017-1
Opportunity Title:	Gulf of Mexico Program Cooperative Agreements 2017
Opportunity Package ID:	PKG00233232
CFDA Number:	66.475
CFDA Description:	Gulf of Mexico Program
Competition ID:	
Competition Title:	
Opening Date:	06/15/2017
Closing Date:	08/04/2017
Agency:	Environmental Protection Agency
Contact Information:	U.S. Environmental Protection Agency Gulf of Mexico Program ATTN: Rachel Houge 2510 14th Street - Suite 1212 Gulfport, MS 39501 GMP-RFP@epa.gov

APPLICANT & WORKSPACE DETAILS:

Workspace ID:	WS00056922
Application Filing Name:	GOMP 2017 DUE 8-4 10:59 PM
DUNS:	6256042100000
Organization:	LAKE PONTCHARTRAIN BASIN FOUNDATION
Form Name:	Application for Federal Assistance (SF-424)
Form Version:	2.1
Requirement:	Mandatory
Download Date/Time:	Aug 04, 2017 12:30:16 PM EDT
Form State:	No Errors

FORM ACTIONS:

Application for Federal Assistance SF-424

*** 1. Type of Submission:**

- ☐ Preapplication
☒ Application
☐ Changed/Corrected Application

*** 2. Type of Application:**

- ☒ New
☐ Continuation
☐ Revision

*** If Revision, select appropriate letter(s):**

*** Other (Specify):**

*** 3. Date Received:**

Completed by Grants.gov upon submission.

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

LA

8. APPLICANT INFORMATION:

*** a. Legal Name:**

Lake Pontchartrain Basin Foundation

*** b. Employer/Taxpayer Identification Number (EIN/TIN):**

72-1152784

*** c. Organizational DUNS:**

6256042100000

d. Address:

*** Street1:**

2045 Lakeshore Drive

Street2:

Suite 339

*** City:**

New Orleans

County/Parish:

Orleans

*** State:**

LA: Louisiana

Province:

*** Country:**

USA: UNITED STATES

*** Zip / Postal Code:**

70122-3454

e. Organizational Unit:

Department Name:

Water Quality

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

Dr.

*** First Name:**

Brady

Middle Name:

Kenyon

*** Last Name:**

Skaggs

Suffix:

Ph.D.

Title:

Water Quality Program Director

Organizational Affiliation:

Lake Pontchartrain Basin Foundation

*** Telephone Number:**

504-836-2235

Fax Number:

504-383-7818

*** Email:**

brady@saveourlake.org

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.475

CFDA Title:

Gulf of Mexico Program

* 12. Funding Opportunity Number:

EPA-GM-COOPERATIVE-AGREEMENTS-2017-1

* Title:

Gulf of Mexico Program Cooperative Agreements 2017

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

SF 424 - 14 - Areas Affected - LPBF.pdf

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

AN INTEGRATED, WASTEWATER-CENTRIC APPROACH TO WATER QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT:
Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens, and Mosquito
Activity

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424**16. Congressional Districts Of:**

* a. Applicant LA-002

* b. Program/Project LA-001

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date: 12/01/2017

* b. End Date: 11/30/2020

18. Estimated Funding (\$):

* a. Federal	412,733.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	412,733.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- ☒ a. This application was made available to the State under the Executive Order 12372 Process for review on 08/03/2017.
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☐ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Ms. * First Name: Kristi

Middle Name:

* Last Name: Trail

Suffix: P.E.

* Title: Executive Director

* Telephone Number: 504-342-2956 Fax Number: 504-383-7818

* Email: kristi@saveourlake.org

* Signature of Authorized Representative: Completed by Grants.gov upon submission. * Date Signed: Completed by Grants.gov upon submission.

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APPLICANT & WORKSPACE DETAILS:

Workspace ID:	WS00056922
Application Filing Name:	GOMP 2017 DUE 8-4 10:59 PM
DUNS:	6256042100000
Organization:	LAKE PONTCHARTRAIN BASIN FOUNDATION
Form Name:	Budget Information for Non-Construction Programs (SF-424A)
Form Version:	1.0
Requirement:	Mandatory
Download Date/Time:	Aug 04, 2017 12:34:38 PM EDT
Form State:	No Errors

FORM ACTIONS:

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. GOMP Cooperative Agreements 2017	66.475	\$ 412,733.00	\$ 412,733.00	\$ 412,733.00	\$ 412,733.00	\$ 412,733.00
2.						
3.						
4.						
5. Totals		\$ 412,733.00	\$ 412,733.00	\$ 412,733.00	\$ 412,733.00	\$ 412,733.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	GOMP Cooperative Agreements 2017				
a. Personnel	\$ 97,976.00	\$	\$	\$	\$ 97,976.00
b. Fringe Benefits	18,172.00				18,172.00
c. Travel	3,234.00				3,234.00
d. Equipment	0.00				0.00
e. Supplies	11,294.00				11,294.00
f. Contractual	159,917.00				159,917.00
g. Construction	0.00				0.00
h. Other	102,545.00				102,545.00
i. Total Direct Charges (sum of 6a-6h)	393,138.00				\$ 393,138.00
j. Indirect Charges	19,595.00				\$ 19,595.00
k. TOTALS (sum of 6i and 6j)	\$ 412,733.00	\$	\$	\$	\$ 412,733.00
7. Program Income	\$ 0.00	\$	\$	\$	\$ 0.00

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Prescribed by OMB (Circular A -102) Page 1A

SECTION C - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. N/A	\$ 0.00	\$	\$ 0.00	\$ 0.00
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	\$ 0.00	\$	\$ 0.00	\$ 0.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 152,941.00	\$ 55,730.00	\$ 38,204.00	\$ 29,504.00	\$ 29,503.00
14. Non-Federal	\$				
15. TOTAL (sum of lines 13 and 14)	\$ 152,941.00	\$ 55,730.00	\$ 38,204.00	\$ 29,504.00	\$ 29,503.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)			
	(b)First	(c) Second	(d) Third	(e) Fourth
16. GOMP Cooperative Agreements 2017	\$ 129,896.00	\$ 129,896.00		
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	\$ 129,896.00	\$ 129,896.00		

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges:
23. Remarks: LPBF's approved indirect cost rate is 29.13% 20% is the rate applied to salary and wages only in this proposal.	

Attachment D

D R A F T 9-20

[illegible]

**Pontchartrain
Conservancy**



Project Title: AN INTEGRATED, WASTEWATER-CENTRIC APPROACH TO WATER QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT: Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens, and Mosquito Activity

Cooperative Agreement Number: MX-00D68218-0

Dates covered by this report: March 1, 2020 to August 31, 2020

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.

Due to the outbreak of Sars-Cov-2 virus causing the COVID-19 beginning in March 2020, progress on the project slowed, as the Governor's stay-at-home order prevented field monitoring. However, the following tasks continued during this period:

- Pontchartrain Conservancy (PC) finalized the Quality Assurance Project Plan (QAPP) and submitted the document to USEPA on May 27, 2020. The QAPP was approved on June 26, 2020.
- Tulane University modified its seminar content to cater to an online webinar format. Tulane continued to develop content for the seminar, as well as a social media strategy.
- Project work was suspended at the behest of St. Tammany Parish during the COVID-pandemic. PC revised health and safety procedures in July of 2020 to incorporate PPE equipment and COVID-specific mitigation procedures into the inspection protocols to protect our inspectors in preparation for the re-commencement of inspections.
- St. Tammany Parish Mosquito Abatement District (STPMAD) was able to perform surveys of drainage ditches when the Parish determined it was safe to do so amid the current pandemic. STPMAD also collected water from ditches of select houses for oviposition trials.
- Tulane University (TU) developed revised social media content strategy and lesson plan for webinar participants for implementation in light of COVID-related social distancing protocols. These materials have been submitted to PC for review and feedback.

2. Were any problems encountered? If yes, please describe corrective actions taken.

The outbreak of the Sars-Cov-2 virus resulted in a worldwide pandemic, hampering field data collection. St. Tammany Parish recommended to PC in the beginning of March to pause the inspection of home systems until the passage of the COVID-19 epidemic, or until it deemed safe to inspect. Because of this issue, compounded with other delays earlier in the project, PC is requesting a no-cost-extension to this project.

3. Is the project work on schedule?

The project work is behind schedule. An adjusted schedule is included in this submittal, as well as PC's request for a no-cost extension to the project.

4. Document any changes in project management (personnel), and provide the updated contact information.

There have been no project personnel changes during this period.

5. Outline the work projected for the next reporting period.

PC will be conducting the following work in the next reporting period:

- A field assessment of targeted areas will be performed, including the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water.
- Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose the ten (10) neighborhoods for further ("Phase I") analysis.
- Phase I assessments of target areas resumed the second week of September, to align with the Phase III reopening plan. PC has coordinated the collection of background data for the pathogen indicators (fecal coliform) to commence the first week of October, as well as adult and larvae mosquito populations, and a suite of enteric pathogens.

6. Subaward Reporting: Report on subaward monitoring activities under 2 CFR 200.331(d) that were not covered in items 1-5 above. This includes: Summaries of results of reviews of financial and programmatic reports; Summaries of findings from site visits and/or desk reviews to ensure effective subrecipient performance; Environmental results the subrecipient achieved; Summaries of audit findings and related pass-through entity management decisions; Actions the pass-through entity has taken to correct deficiencies such as those specified at 2 CFR 200.331(e), 2 CFR 200.207 and the 2 CFR Part 200.338 Remedies for Noncompliance.

During the COVID-19 stay at home order, project subrecipients Tulane University (TU) and St. Tammany Parish Mosquito Abatement District (STPMAD) continued reporting efforts amidst the pandemic. STMAP provided preliminary data related to mosquitos and mosquito fish, and TU provided updates to social media toolkit preparation.

Project Extension Request

PC requests an extension to the project for the following reasons:

This project has undergone delays associated with the change in University Partners and execution of the subaward agreement. St. Tammany Parish partner's also requested the PC pause all home-inspection work between March and September of 2020 in observance of the Governor's Stay-home order and the following SARS-CoV2 reopening phases.

A 2-year extension is requested. Attached is a revised project schedule showing a project end date of 2/28/2023.

As required, MBE/WBE reports for 2018 and 2019 have been submitted.

PC's SAM registration is current.



Project Title: AN INTEGRATED, WASTEWATER-CENTRIC APPROACH TO WATER QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT: Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens, and Mosquito Activity

Cooperative Agreement Number: MX-00D68218-0

Dates covered by this report: October 1, 2018 to March 31, 2019

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.

- LPBF finalized subaward agreements with Tulane University (*Attachment A*), and executed a Memorandum of Understanding with St. Tammany Parish Mosquito Abatement District (*Attachment B*).
- LPBF met with partners at Tulane University to discuss the scope of work at the end of the reporting period. After discussion, Tulane has provided the protocols necessary for pathogen analysis and QAPP planning purposes.

2. Were any problems encountered? If yes, please describe corrective actions taken.

3. Is the project work on schedule?

LPBF has been finalizing both subaward agreements for Tulane University and St. Tammany Mosquito Abatement District. However, with execution of the Tulane agreement LPBF is eager to further project progress. LPBF anticipates submittal of the QAPP in the first half of May 2019. A field assessment will be performed in May, with project sampling activities ready to begin after review of the QAPP by EPA.

4. Document any changes in project management (personnel) and provide the updated contact information.

No changes in project management at LPBF have occurred.

5. Outline the work projected for the next reporting period.

LPBF will be conducting the following work in the next reporting period:

- A field assessment of targeted areas will be performed, including the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water. Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose the ten (10) neighborhoods for further ("Phase I") analysis.
- Phase I assessments of target areas will also begin, including background data for the pathogen indicators (fecal coliform), adult and larvae mosquito populations, and a suite of enteric pathogens

Financial Report

Budget to Actual

For the Period of October 01, 2018 – March 31, 2019*

	Mar '18 - Feb 21 ▼	Budget ▼	\$ Over Budget ▼
Ordinary Income/Expense			
Income			
304 · LPBF Grants & Contracts	33,444.43	412,733.00	(379,288.57)
Total Income	33,444.43	412,733.00	(379,288.57)
Expense			
201 · LPBF Salary & Wages	6,914.57	97,976.00	(91,061.43)
202 · LPBF Fringe Benefits	1,320.86	18,172.00	(16,851.14)
203 · LPBF Indirect	1,382.93	19,595.00	(18,212.07)
204 · LPBF Travel	11.93	3,235.00	(3,223.07)
205 · LPBF Operating/Other	17,475.00	97,545.00	(80,070.00)
206 · LPBF Professional Services	0.00	5,000.00	(5,000.00)
207 · Supplies/Equip(less than)\$5,000	0.00	11,293.00	(11,293.00)
208 · LPBF Contractual	6,339.14	159,917.00	(153,577.86)
Total Expense	33,444.43	412,733.00	(379,288.57)
Net Ordinary Income	0.00	0.00	0.00
Net Income	0.00	0.00	0.00

Attachment A

FDP Fixed Price Research Subaward Agreement

Federal Awarding Agency: Environmental Protection Agency (EPA)

Pass-Through Entity (PTE):

Lake Pontchartrain Basin Foundation

Subrecipient:

The Administrators of the Tulane Educational Fund

PTE PI: Brady Skaggs, Ph.D.

Sub PI: Maureen Lichtveld, M.D., MPH

PTE Federal Award No: MX-00D68218-0

Subaward No: FPSA01-MX00D68218

Project Title: Gulf of Mexico Program

Subaward Period of Performance (Budget Period):

Start: 01/01/2019 End: 08/31/2021

Amount Funded This Action (USD): \$ 174,760.00

Estimated Project Period (if incrementally funded):

Start: End:

Incrementally Estimated Total (USD): \$

Terms and Conditions

1. PTE hereby awards a fixed price Subaward, as described above, to Subrecipient. The Statement of Work and budget for this Subaward are as shown in Attachment 5. In its performance of Subaward work, Subrecipient shall be an independent entity and not an employee or agent of PTE.
2. PTE shall provide funding in accordance with the Payment Schedule shown in Attachment 5. All invoices shall be submitted using Subrecipient's standard invoice, but at a minimum shall include the deliverable completed and milestone payment amount, Subaward number, and certification, as required in 2 CFR 200.415 (a). Invoices that do not reference PTE Subaward number shall be returned to Subrecipient. Invoices and questions concerning invoice receipt or payments shall be directed to the appropriate party's Financial Contact, shown in Attachment 3A.
3. A final invoice, marked "FINAL" must be submitted to PTE's Financial Contact, as shown in Attachment 3A, not later than 60 days after the Project Period. PTE shall make the final payment to Subrecipient upon completion of all required deliverables and reports as indicated in Attachments 4 and 5.
4. Upon the receipt of proper invoices, the PTE agrees to process payments in accordance with this Subaward and 2 CFR 200.305.
5. Matters concerning the technical performance of this Subaward shall be directed to the appropriate party's Principal Investigator as shown in Attachments 3A and 3B. Technical reports are required as shown in Attachment 4.
6. Matters concerning the request or negotiation of any changes in the terms, conditions, or amounts cited in this Subaward, and any changes requiring prior approval, shall be directed to each party's Authorized Official Contact, as shown in Attachments 3A and 3B. Any such change made to this Subaward requires the written approval of each party's Authorized Official, as shown in Attachments 3A and 3B.
7. The PTE may issue non-substantive changes to the Period of Performance and budget Bilaterally. Unilateral modification shall be considered valid 14 days after receipt unless otherwise indicated by Subrecipient when sent to Subrecipient's Authorized Official Contact, as shown in Attachment 3B.
8. Each party shall be responsible for its negligent acts or omissions and the negligent acts or omissions of its employees, officers, or directors, to the extent allowed by law.
9. Either party may terminate this Subaward with 30 days written notice to the appropriate party's Principal Investigator Contact, as shown in Attachments 3A and 3B. PTE shall pay Subrecipient for termination costs as allowable under Uniform Guidance, 2 CFR 200, or 45 CFR Part 75 Appendix IX, as applicable.
10. By signing this Subaward, including the attachments hereto which are hereby incorporated by reference, Subrecipient certifies that it will perform the Statement of Work in accordance with the terms and conditions of this Subaward and the applicable terms of the Federal Award, including the appropriate Research Terms and Conditions ("RTCs") of the Federal Awarding Agency, as referenced in Attachment 2. The parties further agree that they intend this Subaward to comply with all applicable laws, regulations and requirements.

By an Authorized Official of Pass-through Entity:

Kristi Trail

02/15/2019

Name: Kristi Trail, P.E.

Date

Title: Executive Director

By an Authorized Official of Subrecipient:

Tami Jenniskens

2/18/2019

Name: Tami Jenniskens

Date

Title: Associate Director, Sponsored Projects Admin.

Attachment 1
Certifications and Assurances

Subaward Number:

FPSA01-MX00D68218

Certification Regarding Lobbying (2 CFR 200.450)

By signing this Subaward, the Subrecipient Authorized Official certifies, to the best of his/her knowledge and belief, that no Federal appropriated funds have been paid or will be paid, by or on behalf of the Subrecipient, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement in accordance with 2 CFR 200.450.

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or intending to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Subrecipient shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying," to the PTE.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Debarment, Suspension, and Other Responsibility Matters (2 CFR 200.213 and 2 CFR 180)

By signing this Subaward, the Subrecipient Authorized Official certifies, to the best of his/her knowledge and belief that neither the Subrecipient nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any federal department or agency, in accordance with 2 CFR 200.213 and 2 CFR 180.

Audit and Access to Records

Per 2 CFR 200.501- 200.521, Subrecipient certifies that it will provide notice of any adverse findings which impact this Subaward and will provide access to records as required by parts 2 CFR 200.336, 200.337, and 200.201 as applicable. If Subrecipient is not subject to the Single Audit Act, then Subrecipient will provide notice of the completion of any required audits and provide access to such audits upon request.

Program for Enhancement of Contractor Employee Protections (41 U.S.C 4712)

Subrecipient is hereby notified that they are required to: inform their employees working on any federal award that they are subject to the whistleblower rights and remedies of the pilot program; inform their employees in writing of employee whistleblower protections under 41 U.S.C §4712 in the predominant native language of the workforce; and include such requirements in any agreement made with a subcontractor or subgrantee.

The Subrecipient shall require that the language of the certifications above in this Attachment 1 be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

Use of Name

Neither party shall use the other party's name, trademarks, or other logos in any publicity, advertising, or news release without the prior written approval of an authorized representative of that party. The parties agree that each party may use factual information regarding the existence and purpose of the relationship that is the subject of this Subaward for legitimate business purposes, to satisfy any reporting and funding obligations, or as required by applicable law or regulation without written permission from the other party. In any such statement, the relationship of the parties shall be accurately and appropriately described.

Attachment 2
Federal Award Terms and Conditions

Subaward Number
FPSA01-MX00D68218

Required Data Elements

The data elements required by Uniform Guidance are incorporated **as entered.**

Federal Award Issue Date FAIN CFDA No.
03/12/18 00D68218 66.475

This Subaward Is:

☐ Research & Development ☒ Subject to FFATA

CFDA Title
Gulf of Mexico Program
Key Personnel Per NOA
Danny Wiegand, Project Officer

General Terms and Conditions

By signing this Subaward, Subrecipient agrees to the following:

1. To abide by the conditions on activities and restrictions on expenditure of federal funds in appropriations acts that are applicable to this Subaward to the extent those restrictions are pertinent. This includes any recent legislation noted on the Federal Awarding Agency's website:

<https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-2-2017-or-later>

2. 2 CFR 200

3. The Federal Awarding Agency's grants policy guidance, including addenda in effect as of the beginning date of the period of performance or as amended found at:

<https://www.epa.gov/grants/policy-regulations-and-guidance-epa-grants>

4. Research Terms and Conditions, including any Federal Awarding Agency's Specific Requirements found at:

<https://www.epa.gov/grants/grant-terms-and-conditions>

except for the following :

- a. No-cost extensions require the written approval of the PTE. Any requests for a no-cost extension shall be directed to the Principal Investigator Contact shown in Attachment 3A, not less than 30 days prior to the desired effective date of the requested change.
- b. Any payment mechanisms and financial reporting requirements described in the applicable Federal Awarding Agency Terms and Conditions and Agency-Specific Requirements are replaced with Terms and Conditions (1) through (4) of this Subaward; and
- c. Any prior approvals are to be sought from the PTE and not the Federal Awarding Agency.
- d. Title to equipment as defined in 2 CFR 200.33 that is purchased or fabricated with research funds or Subrecipient cost sharing funds, as direct costs of the project or program, shall vest in the Subrecipient subject to the conditions specified in 2 CFR 200.313.
- e. Prior approval must be sought for a change in Subrecipient PI or change in Key Personnel (defined as listed on the NOA).
5. Treatment of program income: **Not Applicable**

This section intentionally left blank

The PTE will make the MPI plan available upon request.

Special Terms and Conditions:

Copyrights:

Subrecipient Grants to PTE an irrevocable, royalty-free, non-transferable, non-exclusive right and license to use, reproduce, make derivative works, display, and perform publicly any copyrights or copyrighted material (including any computer software and its documentation and/or databases) first developed and delivered under this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its PTE Federal Award.

Subrecipient grants to PTE the right to use any written progress reports and deliverables created under this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its Federal Award.

Data Rights:

Subrecipient grants to PTE the right to use data created in the performance of this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its PTE Federal Award.

Data Sharing and Access (Check if applicable):

☒ Subrecipient agrees to comply with the Federal Awarding Agency's data sharing and access requirements as reflected in the NOA (or in the special terms below) and the Data Management/Sharing Plan submitted to the Federal Awarding Agency and **attached.**

Promoting Objectivity in Research (COI):

Subrecipient must designate herein which entity's Financial Conflicts of Interest policy (COI) will apply:

If applying its own COI policy, by execution of this Subaward, Subrecipient certifies that its policy complies with the requirements of the relevant Federal Awarding Agency as identified herein:

Subrecipient shall report any financial conflict of interest to PTE's Administrative Representative or COI contact, as designated on Attachment 3A. Any financial conflicts of interest identified shall, when applicable, subsequently be reported to Federal Awarding Agency. Such report shall be made before expenditure of funds authorized in this Subaward and within 45 days of any subsequently identified COI.

Work Involving Human or Vertebrate Animals (Select Applicable Options)

☒ Human Subjects ☐ Vertebrate Animals ☐ No Human or Vertebrate Animals

Subrecipient agrees that any non-exempt human and/or vertebrate animal research protocol conducted under this Subaward shall be reviewed and approved by its Institutional Review Board (IRB) and/or its Institutional Animal Care and Use Committee (IACUC), as applicable and that it will maintain current and duly approved research protocols for all periods of the Subaward involving human and/or vertebrate animal research. Subrecipient certifies that its IRB and/or IACUC are in full compliance with applicable state and federal laws and regulations. The Subrecipient certifies that any submitted IRB / IACUC approval represents a valid, approved protocol that is entirely consistent with the Project associated with this Subaward. In no event shall Subrecipient invoice or be reimbursed for any human or vertebrate animals related expenses incurred in a period where any applicable IRB / IACUC approval is not properly in place.

The PTE requires verification of IRB and/or IACUC approval be sent to the Principal Investigator as follows:

IRB

Human Subjects Data (Select One)

Human Subjects Data will be exchanged under this Subaward (check all that apply):

- ☒ From Subrecipient to PTE
☐ From PTE to Subrecipient

The PTE will set forth the terms of the exchange of Human Subjects Data (Select One):

Additional Terms

There will be no substantive changes to laboratory methods without prior consultation with, and approval by, the PTE PI.

The following documents, included in Attachment 6, are part of this agreement:

- (a) The Notice of Award issued March 12, 2018 (Attachment 6A);
- (b) The Memorandum of Understanding between LPBF and Tulane University executed July 25, 2018 (Attachment 6B);
- (c) The 3-color timeline/milestones chart for this project, updated and revised beyond what was included in the original project proposal (Attachment 6C); and
- (d) Upon approval by EPA, the Quality Assurance Project Plan for federal award # MX-00D68218-0 will become a part of this agreement, as it pertains to data management and data sharing. During finalization and jointly signing this subaward agreement, a draft of the QAPP is included as Attachment 6D.
- (e) The following attachments are a part of this agreement:
 - 6E Monthly Progress Report Template Provided by PTE
 - 6F Subrecipient Statement of Work
 - 6G Subrecipient Indirect Cost Rate Agreement
 - 6H Subrecipient Project Budget in Excel Format
 - 6I Subrecipient Payment Schedule
 - 6J Subrecipient IRS w-9 Taxpayer Identification and Certification Form
 - 6K Subrecipient Invoice Template Provided by PTE for Subrecipient Use
 - 6L FDP Data Transfer and Use Agreement

Attachment 3A
Pass-Through Entity (PTE) Contacts

Subaward Number:

FP5A01-MX00D68218

PTE Information

Entity Name: Lake Pontchartrain Basin Foundation

Legal Address: 2045 Lakeshore Drive, CERM Bldg #339
New Orleans, LA 70122-3534

Website: www.saveourlake.org

PTE Contacts

Central Email: info@saveourlake.org

Principal Investigator Name: Brady Skaggs, Ph.D.

Email: brady@saveourlake.org

Telephone Number: 504-836-2235

Administrative Contact Name: Tanya Vidal

Email: tanya@saveourlake.org

Telephone Number: 504-836-7119

COI Contact email (if different to above):

Financial Contact Name: Tanya Vidal

Email: tanya@saveourlake.org

Telephone Number: 504-836-7119

Email invoices? ☒ Yes ☐ No Invoice email (if different):

Authorized Official Name: Kristi Trail, Executive Director

Email: kristi@saveourlake.org

Telephone Number: 504-836-2215

PI Address:

2045 Lakeshore Drive, CERM Bldg #339
New Orleans, LA 70122-3534

Administrative Address:

2045 Lakeshore Drive, CERM Bldg #339
New Orleans, LA 70122-3534

Invoice Address:

Lake Pontchartrain Basin Foundation
P.O. Box 6965
Metairie, LA 70009-6965

Attachment 3B**Subrecipient Contacts**

Subaward Number:

FPSA01-MX00D68218

Subrecipient Information for FFATA reporting

Entity's DUNS Name: The Administrators of the Tulane Educational Fund

EIN No.: 72-0423889

Institution Type: Private Institution of Higher Education

DUNS: 053785812

Currently registered in SAM.gov: ☒ Yes ☐ NoExempt from reporting executive compensation: ☐ Yes ☒ No (if no, complete 3Bpg2)

Parent DUNS:

This section for U.S. Entities:

Zip Code Look-up

Place of Performance Address

Congressional District: LA-002

Zip Code+4:

70112-2699

Tulane University School of Public Health and Tropical Medicine
1440 Canal Street, Suite 2100 MB Code #8360
New Orleans, LA 70112-2699

Subrecipient Contacts

Central Email: elecnoft@tulane.edu

Website: www.tulane.edu

Principal Investigator Name: Maureen Lichtveld, M.D., MPH

Email: mlichtve@tulane.edu

Telephone Number: 504-988-7904

Administrative Contact Name: Lisa Paterson

Email: lpaterso@tulane.edu

Telephone Number: 504-988-6529

Financial Contact Name: Gail Lassair

Email: glassair@tulane.edu

Telephone Number: 504-865-8337

Invoice/Payment Email: glassair@tulane.edu

Authorized Official Name: Tami Jenniskens

Email: tjennis@tulane.edu

Telephone Number: 504-988-5615

Legal Address:

1430 Tulane Avenue, Box 8915, New Orleans, LA 70112-2699

Administrative Address:

1440 Canal Street, Suite 2100, Box 8360, New Orleans, LA 70112-2699

Payment Address:

Office of Grants and Contracts, 800 Ease Commerce Road, Suite 203, Harahan, LA 70123

Attachment 3B-2
Highest Compensated Officers

Subaward Number:

FP5A01-MX00D68218

Subrecipient:

Institution Name: The Administrators of the Tulane Educational Fund

PI Name: Maureen Lichtveld, M.D., MPH

Highest Compensated Officers

The names and total compensation of the five most highly compensated officers of the entity(ies) must be listed if the entity in the preceding fiscal year received 80 percent or more of its annual gross revenues in Federal awards; and \$25,000,000 or more in annual gross revenues from Federal awards; and the public does not have access to this information about the compensation of the senior executives of the entity through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. See FFATA § 2(b)(1) Internal Revenue Code of 1986.

Officer 1 Name:

Officer 1 Compensation:

Officer 2 Name:

Officer 2 Compensation:

Officer 3 Name:

Officer 3 Compensation:

Officer 4 Name:

Officer 4 Compensation:

Officer 5 Name:

Officer 5 Compensation:

Attachment 4
Reporting and Prior Approval Terms

Subaward Number:

FPSA01-MX00D68218

Subrecipient agrees to submit the following reports (PTE contacts are identified in Attachment 3A):

Technical Reports:

- ☒ Monthly technical/progress reports will be submitted to the PTE's Principal Investigator within 15 days of the end of the month.
- ☐ Quarterly technical/progress reports will be submitted within 30 days after the end of each project quarter to the PTE's Administrative Contact
- ☐ Annual technical / progress reports will be submitted within 60 days prior to the end of each budget period to the PTE's Administrative Contact. Such report shall also include a detailed budget for the next Budget Period, updated other support for key personnel, certification of appropriate education in the conduct of human subject research of any new key personnel, and annual IRB or IACUC approval, if applicable.
- ☒ A Final technical/progress report will be submitted to the PTE's Principal Investigator within 60 days of the end of the Project Period or after termination of this award, whichever comes first.
- ☒ Technical/progress reports on the project as may be required by PTE's Principal Investigator in order for the PTE to satisfy its reporting obligations to the Federal Awarding Agency.

Prior Approvals:

Carryover is not applicable for fixed price Subawards

Other Reports:

- ☐ A Certification of Completion, in accordance with 2 CFR 200.201(b)(3), will be submitted 60 days after the end of the Project Period to the PTE's Administrative Contact
- ☒ In accordance with 37 CFR 401.14, Subrecipient agrees to notify PTE's Principal Investigator within 30 days after Subrecipient's inventor discloses invention(s) in writing to Subrecipient's personnel responsible for patent matters. The Subrecipient will submit a final invention report using Federal Awarding Agency specific forms to the PTE's Principal Investigator within 60 days of the end of the Project Period to be included as part of the PTE's final invention report to the Federal Awarding Agency.

A negative report is required: Yes

- ☐ Property Inventory Report (only when required by Federal Awarding Agency), specific requirements below.

Other Special Reporting Requirements:

Subrecipient reports and invoices cannot be evaluated and processed by PTE unless the following tool is used as described:

Each Monthly Progress Report is submitted to PTE, by the 15th day following the subject month, via email to the PI (brady@saveourlake.org), consisting of raw data spreadsheets in Excel format and accompanying narrative submitted on LPBF-provided monthly progress report template in Microsoft Word format (Attachment 6E).

Attachment 5
Statement of Work, Indirects, & Payment Schedule

Subaward Number:

FPSA01-MX00D68218

Statement of Work

☐ Below ☒ Attached, pages

If award is FFATA eligible and SOW exceeds 4000 characters, include a *Subrecipient Federal Award Project Description*

Attachment 6F

Budget & Milestone Information

Indirect Information

Indirect Cost Rate (IDC) Applied: % Rate Type:

Milestone Details

☐ Below ☒ Attached, pages

Attachment 6

Notice of Award (NOA) and any additional documents

- ☒ The following pages include the NOA and if applicable any additional documentation referenced throughout this Subaward.
- ☐ Not incorporating the NOA or any additional documentation to this Subaward.

Attachment 6A - Notice of Prime Award

MX - 00D68218 - 0 Page 1

	U.S. ENVIRONMENTAL PROTECTION AGENCY Cooperative Agreement		GRANT NUMBER (FAIN): 00D68218 MODIFICATION NUMBER: 0 PROGRAM CODE: MX	DATE OF AWARD 03/12/2018
			TYPE OF ACTION New	MAILING DATE 03/19/2018
			PAYMENT METHOD: ACH	ACH# 60634
RECIPIENT TYPE: Not for Profit			Send Payment Request to: Las Vegas Finance Center	
RECIPIENT: Lake Pontchartrain Basin Foundation 2045 Lakeshore Drive CERM Bldg. 339 New Orleans, LA 70122 EIN: 72-1152784			PAYEE: Lake Pontchartrain Basin Foundation 2045 Lakeshore Drive CERM Bldg. 339 New Orleans, LA 70122	
PROJECT MANAGER Dr. Brady Kenyon Skaggs 2045 Lakeshore Drive CERM Bldg. 339 New Orleans, LA 70122 E-Mail: brady@saveourlake.org Phone: 504-836-2235		EPA PROJECT OFFICER Danny Wiegand 2510 14th Street Gulfport, MS 39501 E-Mail: wiegand.danny@epa.gov Phone: 228-679-5897		EPA GRANT SPECIALIST Margaret Crowe Grants and Audit Management Section E-Mail: crowe.margaret@epa.gov Phone: 404-562-8687
PROJECT TITLE AND DESCRIPTION Gulf of Mexico Program This action provides funding in the amount of \$412,733 for Lake Pontchartrain Basin Foundation to use an interdisciplinary approach to improve surface waters in residential communities utilizing aerated treatment units for wastewater management. The project will assess water quality, waterborne pathogens, and vectors of human diseases and also will correlate these parameters, intervene to improve conditions, and educate area residents and community leaders.				
BUDGET PERIOD 03/01/2018 - 02/28/2021	PROJECT PERIOD 03/01/2018 - 02/28/2021	TOTAL BUDGET PERIOD COST \$412,733.00	TOTAL PROJECT PERIOD COST \$412,733.00	
NOTICE OF AWARD Based on your Application dated 08/03/2017 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards \$412,733. EPA agrees to cost-share <u>100.00%</u> of all approved budget period costs incurred, up to and not exceeding total federal funding of \$412,733. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.				
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)		AWARD APPROVAL OFFICE		
ORGANIZATION / ADDRESS 61 Forsyth Street Atlanta, GA 30303-8960		ORGANIZATION / ADDRESS U.S. EPA, Region 4 Gulf of Mexico Program 2510 14th Street Gulfport, MS 39501		
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY				
Digital signature applied by EPA Award Official Keva R. Lloyd - Grants Management Officer				DATE 03/12/2018

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FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$	\$ 412,733	\$ 412,733
EPA In-Kind Amount	\$	\$	\$ 0
Unexpended Prior Year Balance	\$	\$	\$ 0
Other Federal Funds	\$	\$	\$ 0
Recipient Contribution	\$	\$	\$ 0
State Contribution	\$	\$	\$ 0
Local Contribution	\$	\$	\$ 0
Other Contribution	\$	\$	\$ 0
Allowable Project Cost	\$ 0	\$ 412,733	\$ 412,733

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.475 - Gulf of Mexico Program	Clean Water Act: Sec. 104(b)(3)	2 CFR 200 2 CFR 1500 and 40 CFR 33

Fiscal									
Site Name	Req No	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
	1804M8G016	1718	B	04M	202B65	4183			412,733
									412,733

Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$97,976
2. Fringe Benefits	\$18,172
3. Travel	\$3,234
4. Equipment	\$0
5. Supplies	\$11,294
6. Contractual	\$159,917
7. Construction	\$0
8. Other	\$102,545
9. Total Direct Charges	\$393,138
10. Indirect Costs: <u>20.00%</u> Base <u>Personnel</u>	\$19,595
11. Total (Share: Recipient <u>0.00</u> % Federal <u>100.00</u> %.)	\$412,733
12. Total Approved Assistance Amount	\$412,733
13. Program Income	\$0
14. Total EPA Amount Awarded This Action	\$412,733
15. Total EPA Amount Awarded To Date	\$412,733

Administrative Conditions

GENERAL TERMS AND CONDITIONS

The recipient agrees to comply with the current EPA general terms and conditions available at:

<https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-2-2017-or-later>

<https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-3-2016-or-later> These terms and conditions are in addition to the assurances and certifications made as a part of the award and the terms, conditions, or restrictions cited throughout the award.

The EPA repository for the general terms and conditions by year can be found at <http://www.epa.gov/grants/grant-terms-and-conditions>.

1. ANNUAL FFR (Interim) pursuant to 2 CFR 200.327

Pursuant to 2 CFR 200.327, EPA recipients shall submit an interim annual Federal Financial Report (FFR, SF-425) to EPA no later than 90 calendar days following the anniversary of the award date. The form is available on the internet at:

<http://www2.epa.gov/financial/forms>.

The following reporting period end dates shall be used for interim annual reports: 3/31, 6/30, 9/30, or 12/31.

At the end of the project, the recipient must submit a final FFR to EPA no later than 90 calendar days after the end of the project period. The form is available on the internet at: <http://www2.epa.gov/financial/forms>. All FFRs must be submitted to the Las Vegas Finance Center (LVFC) via email LVFC-grants@epa.gov.

2. UTILIZATION OF SMALL, MINORITY AND WOMEN'S BUSINESS ENTERPRISES

GENERAL COMPLIANCE, 40 CFR, Part 33

The recipient agrees to comply with the requirements of EPA's Disadvantaged Business Enterprise (DBE) Program for procurement activities under assistance agreements, contained in 40 CFR, Part 33.

MBE/WBE REPORTING, 40 CFR, Part 33, Subpart E

MBE/WBE reporting is required in annual reports. Reporting is required for assistance agreements where there are funds budgeted for procuring construction, equipment, services and supplies, including funds budgeted for direct procurement by the recipient or procurement under subawards or loans in the "Other" category that exceed the threshold amount of \$150,000, including amendments and/or modifications.

Based on EPA's review of the planned budget, this award meets the conditions above and is subject to the Disadvantaged Business Enterprise (DBE) Program reporting requirements. However, if recipient believes this award does not meet these conditions, it must provide [insert Regional or Headquarters point of contact] with a justification and budget detail within 21 days of the award date clearly demonstrating that, based on the planned budget, this award is not subject to the DBE reporting requirements.

The recipient agrees to complete and submit a "MBE/WBE Utilization Under Federal Grants, Cooperative Agreements and Interagency Agreements" report (EPA Form 5700-52A) on an annual basis. All procurement actions are reportable, not just that portion which exceeds \$150,000.

When completing the annual report, recipients are instructed to check the box titled "annual" in section 1B of the form. For the final report, recipients are instructed to check the box indicated for the "last report" of the project in section 1B of the form. Annual reports are due by October 30th of each year. Final reports are due by October 30th or 90 days after the end of the project period, whichever comes first.

The reporting requirement is based on total procurements. Recipients with expended and/or budgeted funds for procurement are required to report annually whether the planned procurements take place during the reporting period or not. If no budgeted procurements take place during the reporting period, the recipient should check the box in section 5B when completing the form.

MBE/WBE reports should be sent to:

MBE/WBE reports should be sent to:
R4epagrantsmbewbereporting@epa.gov
and
cc: crowe.margaret@epa.gov
Attn: Margaret Crowe

The current EPA Form 5700-52A can be found at the EPA Office of Small Business Program's Home Page at http://www.epa.gov/osbp/dbe_reporting.htm

This provision represents an approved deviation from the MBE/WBE reporting requirements as described in 40 CFR, Part 33, Section 33.502; however, the other requirements outlined in 40 CFR Part 33 remain in effect, including the Good Faith Effort requirements as described in 40 CFR Part 33 Subpart C, and Fair Share Objectives negotiation as described in 40 CFR Part 33 Subpart D and explained below.

FAIR SHARE OBJECTIVES, 40 CFR, Part 33, Subpart D

A recipient must negotiate with the appropriate EPA award official, or his/her designee, fair share objectives for MBE and WBE participation in procurement under the financial assistance agreements.

In accordance with 40 CFR, Section 33.411 some recipients may be exempt from the fair share objectives requirements as described in 40 CFR, Part 33, Subpart D. Recipients should work with their DBE coordinator, if they think their organization may qualify for an exemption.

Accepting the Fair Share Objectives/Goals of Another Recipient

The dollar amount of this assistance agreement, or the total dollar amount of all of the recipient's financial assistance agreements in the current federal fiscal year from EPA is \$250,000, or more. The **Louisiana Department of Environmental Quality** has negotiated the following, applicable MBE/WBE fair share objectives/goals with EPA as follows:

	MBE	WBE
Construction	23.40%	11.90%
Supplies	1.40%	1.40%
Services	17.10%	12.40%
Goods/Equipment	1.50%	1.40%

By signing this financial assistance agreement, the recipient is accepting the fair share objectives/goals stated above and attests to the fact that it is purchasing the same or similar construction, supplies, services and equipment, in the same or similar relevant geographic buying market as **Louisiana Department of Environmental Quality**.

Negotiating Fair Share Objectives/Goals, 40 CFR, Section 33.404

The recipient has the option to negotiate its own MBE/WBE fair share objectives/goals. If the recipient wishes to negotiate its own MBE/WBE fair share objectives/goals, the recipient agrees to submit proposed MBE/WBE objectives/goals based on an availability analysis, or disparity study, of qualified MBEs and WBEs in their relevant geographic buying market for construction, services, supplies and equipment.

The submission of proposed fair share goals with the supporting analysis or disparity study means that the recipient is **not** accepting the fair share objectives/goals of another recipient. The recipient agrees to submit proposed fair share objectives/goals, together with the supporting availability analysis or disparity study, to the Regional MBE/WBE Coordinator within 120 days of its acceptance of the financial assistance award. EPA will respond to the proposed fair share objective/goals within 30 days of receiving the submission. If proposed fair share objective/goals are not received within the 120 day time frame, the recipient may not expend its EPA funds for procurements until the proposed fair share objective/goals are submitted.

SIX GOOD FAITH EFFORTS, 40 CFR, Part 33, Subpart C

Pursuant to 40 CFR, Section 33.301, the recipient agrees to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, and to require that sub-recipients, loan recipients, and prime contractors also comply. Records documenting compliance with

the six good faith efforts shall be retained:

- (a) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- (b) Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- (c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- (d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
- (e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- (f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

CONTRACT ADMINISTRATION PROVISIONS, 40 CFR, Section 33.302

The recipient agrees to comply with the contract administration provisions of 40 CFR, Section 33.302.

BIDDERS LIST, 40 CFR, Section 33.501(b) and (c)

Recipients of a Continuing Environmental Program Grant or other annual reporting grant, agree to create and maintain a bidders list. Recipients of an EPA financial assistance agreement to capitalize a revolving loan fund also agree to require entities receiving identified loans to create and maintain a bidders list if the recipient of the loan is subject to, or chooses to follow, competitive bidding requirements. Please see 40 CFR, Section 33.501 (b) and (c) for specific requirements and exemptions.

3. Indirect Cost Rate for Non-Profit Organizations

- a. If the recipient does not have a previously established indirect cost rate, and is not approved for use of a 10% flat IDC rate, it agrees to prepare and submit its indirect cost rate proposal in accordance with the appropriate federal cost principles, 2 CFR 230,

"Cost Principles for Non-Profit Organizations".

The recipient must send its proposal to its cognizant federal agency within ninety (90) days from the effective date of the award of this assistance agreement. The recipient must carbon copy this EPA office with its proposal.

If EPA is the cognizant federal agency of the non-profit organization, the recipient must send its indirect cost rate proposal within ninety (90) days from the effective date of the award to:

Via Email: OGD_IndirectCost@EPA.GOV

Via Regular Mail: National Policy, Training and Compliance Division
Office of Grants and Debarment
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, MC 3903R
Washington, DC 20460
Attn: OGD Indirect Cost Rate Control Desk

Via Fedex/UPS: National Policy, Training and Compliance Division
Office of Grants and Debarment
U.S. Environmental Protection Agency
1300 Pennsylvania Avenue, NW, 5th Floor
Washington, DC 20004
Attn: OGD Indirect Cost Rate Control Desk

The non-profit recipient agrees to follow the enclosed "Sample Indirect Cost Proposal Format for Nonprofit Organizations." The sample proposal may also be accessed at: <http://www2.epa.gov/grants/sample-indirect-cost-proposal-format-nonprofit-organization>. Another resource is the "EPA Guide on How to Prepare an Indirect Cost Rate Proposal for a Non-Profit Organization," and may be found at: <http://www2.epa.gov/grants/how-prepare-indirect-cost-rate-proposal-non-profit-organization>

b. Recipients may not draw down indirect costs unless they: i) have a current rate agreement; ii) have been approved for a flat 10% rate; or iii) have submitted, within 90 days of award, an indirect cost rate proposal to their cognizant federal agency for review and approval and a final rate has been determined by the cognizant agency.

c. Recipients are responsible for maintaining an approved indirect cost rate. Recipients with differences between their provisional rates and final rates are not entitled to more than the amount identified in the award for indirect costs without EPA approval.

Programmatic Conditions

A. This is a cooperative agreement because the activities will require substantial federal involvement in the form of programmatic oversight and technical assistance including reviewing and commenting on agreement activities and products.

B. Semi-annual Progress Reports (see Template below) must be submitted to the EPA Project Officer within 30 days after each reporting period ends. Please reference the EPA Cooperative Agreement Number on all reports and correspondence.

Progress Report Template

Project Title:

Cooperative Agreement Number:

Dates covered by this report:

The items listed below should be completely addressed:

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.
2. Were any problems encountered? If yes, please describe corrective actions taken.
3. Is the project work on schedule?
4. Document any changes in project management (personnel) and provide the updated contact information.
5. Outline the work projected for the next reporting period.
6. **Subaward Reporting:** Report on subaward monitoring activities under 2 CFR 200.331 (d) that were not covered in items 1-5 above. This includes: Summaries of results of reviews of financial and programmatic reports; Summaries of findings from site visits and/or desk reviews to ensure effective subrecipient performance; Environmental results the subrecipient achieved; Summaries of audit findings and related pass-through entity management decisions; Actions the pass-through entity has taken to correct deficiencies such as those specified at 2 CFR 200.331(e), 2 CFR 200.207 and the 2 CFR Part 200.338 Remedies for Noncompliance.

C. Measurable Outputs

The recipient must report to the EPA Project Officer the outputs achieved for the previous six months as well as cumulative outputs achieved over the life of the project by March 31st and September 30th of each year. Outputs are project-specific and must include:

1. number of water bodies and/or segments with 5% improvement in a water quality parameter(s); and
2. number of individuals reached through environmental education/outreach methods.

D. An electronic copy of the Final Performance Report must be submitted to the EPA Project Officer within 90 days after the project end date.

E. Competency of Organizations Generating Environmental Measurement Data

In accordance with Agency Policy Directive Number FEM-2012-02, Policy to Assure the Competency of Organizations Generating Environmental Measurement Data under Agency-Funded Assistance Agreements, Recipient agrees, by entering into this agreement, that it has demonstrated competency prior to award, or alternatively, where a pre-award demonstration of competency is not practicable, Recipient agrees to demonstrate competency prior to carrying out any activities under the award involving the generation or use of environmental data. Recipient shall maintain competency for the duration of the project period of this agreement and this will be documented during the annual reporting process. A copy of the Policy is available online at http://www.epa.gov/fem/lab_comp.htm or a copy may also be requested by contacting the EPA project officer for this award.

F. Prior to environmental data collection or data compilation, a copy of the EPA approved Quality Assurance Project Plan (QAPP) must be submitted to the EPA project officer. A copy of the EPA approved Quality Management Plan (QMP) must also be submitted to the EPA project officer. Environmental data generated under this agreement must be submitted to the EPA project officer, if requested.

G. All geospatial data created must be consistent with Federal Geographic Data Committee (FGDC) endorsed standards. Information on these standards may be found at www.fgdc.gov.

H. Cybersecurity Condition

(a) The recipient agrees that when collecting and managing environmental data under this assistance agreement, it will protect the data by following all applicable State or Tribal law cybersecurity requirements. (b) (1) EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement, are secure. For purposes of this Section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition. If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer (PO) no later than 90 days after the date of this award and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data. (2) The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in (b)(1) if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by including this requirement in subaward agreements; and during subrecipient monitoring deemed necessary by the recipient under 2 CFR 200.331(d), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the

recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement between the subrecipient and EPA.

MEMORANDUM OF UNDERSTANDING

This **Memorandum of Understanding** ("**MOU**") is made and entered into this 25th day of July, 2018 (the "**Effective Date**") by and among **The Lake Pontchartrain Basin Foundation** ("**Foundation**" or "**LPBF**"), a 501(c)(3) not-for-profit, non-governmental organization located in Louisiana and having an address at 2045 Lakeshore Drive, Suite 339, New Orleans, LA 70122 and **The Administrators of the Tulane Educational Fund d.b.a Tulane University through the Tulane School of Public Health and Tropical Medicine** ("**Tulane**") that is a not-for-profit company located at 1440 Canal Street, New Orleans, Louisiana, 70112 (Tulane and Foundation collectively are referred to as the "**Parties**") who enter into this MOU consistent with the terms, conditions and mutual covenants as set forth below:

RECITALS

WHEREAS, both Parties acknowledge the importance of establishing cultural, educational, and scientific relations in order to further their institutional aims; and

WHEREAS, both Parties share a common interest in developing education, research and learning in various fields; and

WHEREAS, it is in the best interest each Party to obtain the assistance of the other Party in the pursuit of the objectives and goals enumerated in this MOU; and

WHEREAS, the Parties possess the facilities and personnel necessary to pursue the objectives and fulfill the requirements of this MOU; and

NOW, THEREFORE, in consideration of the foregoing premises and the terms and conditions contained in this MOU, the Parties agree as follows:

ARTICLE 1

SCOPE & PURPOSE

1.1 PURPOSE. It is in the interest of the Parties to explore possible collaborations on curriculum development, teaching, research projects and exchanges of faculty, staff, students, information and experiences in several areas of public health. This MOU will facilitate increased cooperation between Foundation and Tulane for the purpose of facilitating collaborating in current and future funded projects, and to assist in identifying and evaluating other opportunities that would improve public health for the residents of the Pontchartrain Basin.

1.2 SCOPE. Tulane and Foundation desire to promote the following activity, which may be formally developed by means of a separate legally binding agreement between the Parties:

- I. Through this MOU, Tulane and the Foundation intend to collaborate to enhance awareness of community partnership opportunities in the New Orleans and surrounding areas highlighting efforts to protect public health. The Parties recognize that there are many possible areas in which enhanced cooperation could be beneficial and therefore may agree to work to enhance cooperation in other areas without amending this MOU;
- II. Explore possible collaborations on curriculum development, teaching, research projects and exchanges of information and experiences in several areas of public health;
- III. Seek to improve understanding between their respective institutions and to establish mutually beneficial collaborations benefiting their students, scholars, faculty, and employees; and

IV. Enhance coordination, when applicable and appropriate, in the areas of water quality, habitat restoration, community resilience, environmental education, and environmental justice.

1.3 **FUNDING.** The Parties acknowledge that this MOU does not in and of itself effectuate the transfer of monies between the Parties, and, as such, the Parties acknowledge and agree to enter into additional legally binding agreements as desired and appropriate on an activity-specific basis.

1.4 **COMPLIANCE.** Tulane and Foundation agree to conduct all activities undertaken pursuant to this MOU in accordance with all applicable federal, state and local laws, regulations, and guidance.

ARTICLE 2

TERM OF MOU

2.1 The term of this MOU shall be three (3) years ("Term"), commencing on the Effective. The MOU shall renew upon the express written consent of both Parties. At any given time, any Party may, in its sole discretion, terminate this MOU with or without cause by giving the other Party at least sixty (60) days' prior written notice.

ARTICLE 3

RELATIONSHIP OF PARTIES

3.1 It is expressly understood and agreed that, in the performance of activities contemplated by this MOU, Foundation and Tulane will at all times act as independent contractors with respect to each other, and not as an employee, agent, or faculty member of one another. Nothing contained in this MOU will be construed to create a joint venture, partnership, association, or other affiliation or like relationship between the Parties. In no event will the Parties be liable for the debts or obligations of one another, except as otherwise specifically provided in this MOU.

ARTICLE 4

MISCELLANEOUS PROVISIONS

4.1 **ENTIRE MOU; MODIFICATION.** This MOU contains the entire understanding of the Parties with respect to the subject matter hereof and supercedes all prior MOUs, oral or written, and all other communications between the Parties relating to such subject matter. This MOU may not be amended or modified except by mutual written agreement among the Parties.

4.2 **NOTICE.** Any notice required to be given under this Agreement by either Party will be in writing and sent to the other Party by either hand delivery or certified mail return receipt requested as follows:

If to Tulane:

Thomas LaVeist
Dean, Tulane School of Public
Health and Tropical Medicine
1440 Canal Street
New Orleans, LA 70112

With copy to:

Victoria Johnson, General Counsel
Tulane University
300 Gibson Hall
New Orleans, LA 70118

If to Foundation:

Kristi Trail, P.E.
Executive Director
Lake Pontchartrain Basin Foundation
PO Box 6965
Metairie, LA 70009

With copy to:

Stephen Conroy, General Counsel.
Conroy Law Firm
Three Lakeway Center
3838 N. Causeway Blvd., STE 3130
Metairie, LA 70002

4.3 LIAISONS. To facilitate communications between the Parties, each Party will designate an individual to serve as a primary contact and otherwise liaise with the other Party:

For Foundation:

Name: Brady K. Skaggs, Ph.D.
Title: Water Quality Program Director
E-mail: brady@saveourlake.org
Phone: (504) 442-3602

For Tulane:

Name: Maureen Lichtveld, M.D.
Title: Chair, GEHS
E-Mail: mlichtve@tulane.edu
Phone: (504) 988-5953

4.4 COUNTERPARTS. This MOU may be executed in one or more counterparts, all of which together shall constitute only one MOU.

IN WITNESS WHEREOF the Parties have executed this MOU in two originals in equal meaning and content and the Parties agree that this MOU represents their intention in relation to the activities described herein.

**THE LAKE PONTCHARTRAIN BASIN
FOUNDATION**

By: Kristi Trail

Name: Kristi Trail, P.E.

Title: Executive Director

Date: 07-25-2018

**THE ADMINISTRATORS OF THE TULANE
EDUCATIONAL FUND THROUGH THE
TULANE SCHOOL OF PUBLIC HEALTH
AND TROPICAL MEDICINE**

By: LuAnn E. White

Name: LuAnn E. White, PhD, DABT

Title: Senior Associate Dean

Date: 07-25-18

Attachment 6C - Project Timeline and Milestones Chart

[illegible]

Monthly Progress Report to the Lake Pontchartrain Basin Foundation
Submit via email to brady@saveourlake.org by 15th of the following month

Please submit this form in Word format - In addition, provide raw data as Excel spreadsheets - Do not PDF these documents

Subawardee name:		Project Title and Description: EPA Gulf of Mexico Program	
Subaward Number: FPSA01(or 02)-MX00D68218		This action provides funding for LPBF to use an interdisciplinary approach to improve surface waters in residential communities utilizing aerate treatment units for wastewater management. The project will assess water quality, waterborne pathogens, and vectors of human diseases and also will correlate these parameters, intervene to improve conditions, and educate area residents and community leaders.	
Reporting period : mo/dt/year to mo/dt/year	Report type: Interim	Percent Project Completion (%):	Name of Person(s) Completing Report:
		Date report completed: Month, ##, year	

This two-page progress report is required by the terms of your organization's agreement with the Lake Pontchartrain Basin Foundation. EPA, as the Federal granting agency, and the Lake Pontchartrain Basin Foundation, as the pass-through entity and grant administrator, rely on the information in this Monthly Progress Report as a record of performance of your project. Therefore, it is important for the information you provide in this report be accurate, complete, and an up-to-date reflection of actual project activities. Use additional pages as necessary.

Task 1 - Laboratory

1-1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.
1-2. Were any problems encountered? If yes, please describe corrective actions taken.
1-3. Do you anticipate that the project will require a time extension beyond the original date to complete project work? Yes No If "yes," please explain.
1-4. Has there been a deviation from the procedures described in the approved Quality Assurance Project Plan (QAPP)? Yes No If "yes," please explain.
1-5. To complete this project, do you anticipate needing secondary data, from outside this project, generated by others? Yes No If "yes," please explain in detail, as an amendment to the approved QAPP may be required.

Monthly Progress Report to the Lake Pontchartrain Basin Foundation
Submit via email to brady@saveourlake.org by 15th of the following month

Please submit this form in Word format - In addition, provide raw data as Excel spreadsheets - Do not PDF these documents

Task 2 - Community

2-1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.	
2-2. Were any problems encountered? If yes, please describe corrective actions taken.	
2-3. Do you anticipate that the project will require a time extension beyond the original date to complete project work? ____ Yes ____ No If "yes," please explain why and the time needed.	
2-4. Has there been a deviation from the procedures described in the approved Quality Assurance Project Plan (QAPP)? ____ Yes ____ No If "yes," please explain.	
2-5. To complete this project, do you anticipate needing secondary data, from outside this project, generated by others? ____ Yes ____ No If "yes," please explain in detail, as an amendment to the approved QAPP may be required.	

PLEASE LIST THE DOCUMENT NAMES OF ANY OTHER ATTACHMENTS PROVIDED WITH THIS REPORT:

- _____
- _____
- _____
- _____

Attachment 6F - Tulane University Scope of Work

TASK 1 - Laboratory

- LPBF will assess the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water; Tulane University (TU) partners can also participate. Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose ten (10) neighborhoods for further ("Phase I") analysis.
- TU will perform "Phase I" analysis of ten (10) ATU-utilizing subdivisions over the course of a year (no less than 10 months) for fecal indicators (fecal coliform), and a suite of enteric pathogens (Campylobacter, Enterotoxigenic *E. coli* (LT/ST), Siga-like toxin producing *E. coli* (STEC), Salmonella, Shigella, Vibrio cholera, Norovirus GI/GII, Rotavirus, *E. coli* O157H7, Adenovirus 40/41) using quantitative PCR system. Water Quality measurements will be collected for pH, DO, conductivity, temperature, and turbidity. LPBF staff will collect water samples and transport immediately to Dr. Sherchan's laboratory in a cooler (1440 Canal St, Suite 2100, New Orleans, LA, 70112).
- To document water quality improvements through the intervention, LPBF will collect samples from the 10 sites (monthly, detailed in Phase I) within the targeted neighborhoods for water quality parameters for fecal indicator analysis of samples in Phase II to assess changes due to the intervention program.

TASK 2 - Community Engagement

- Conduct two focus groups at the beginning of the project to gain feedback in understanding the wastewater/mosquito/ditch issues of inhabitants in the watershed. The results of the focus groups will be used to inform education and outreach for the remainder of the project.
- Engage an estimated interaction with 200+ diverse residents: prepare and perform twelve educational presentations for schools, neighborhood associations, churches, and business groups within the watershed. The aim will be to catalyze a Citizen Science program for residents to understand more about their immediate environment and steps they can take to monitor, mitigate, and remediate wastewater and mosquito issues.
- Create and provide a content strategy for social media, to be placed on all partners' platforms to include: six blog posts; three podcasts; a minimum of twenty unique 140 character (or less) posts for social media platforms (such as Twitter, LinkedIn, Facebook, etc). Connectivity will be facilitated by development of a primary "#hashtag" campaign.
- Prepare and assist with the dissemination of information via media connections with news articles, press releases, and interviews for traditional media outlets.
- Prepare and provide to LPBF a *Home-Wastewater Strategy Report*, educational toolbox for homeowners, and a handbook for local government through the analysis of results from Phase I and II data and interviews conducted with community leaders.

Attachment 6G - Subrecipient Indirect Cost Rate Agreement

COLLEGES AND UNIVERSITIES RATE AGREEMENT

EIN: 1720423889A2

DATE:11/19/2018

ORGANIZATION:

FILING REF.: The preceding
agreement was dated
02/06/2018

Tulane University

7029C Freret St.

New Orleans, LA 70118-5698

The rates approved in this agreement are for use on grants, contracts and other agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: INDIRECT COST RATES

RATE TYPES: FIXED FINAL PROV. (PROVISIONAL) PRED. (PREDETERMINED)

EFFECTIVE PERIOD

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE(%) LOCATION</u>	<u>APPLICABLE TO</u>
PRED.	07/01/2017	06/30/2019	50.50 On Campus	Organized Research
PRED.	07/01/2019	06/30/2020	51.50 On Campus	Organized Research
PRED.	07/01/2020	06/30/2021	52.00 On Campus	Organized Research
PRED.	07/01/2017	06/30/2021	33.40 On Campus	Other Sponsored Activities
PRED.	07/01/2017	06/30/2021	26.00 Off Campus	All Programs
PROV.	07/01/2021	Until Amended		Use same rates and conditions as those cited for fiscal year ending June 30, 2021.

*BASE

ORGANIZATION: Tulane University

AGREEMENT DATE: 11/19/2018

Modified total direct costs, consisting of all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel and up to the first \$25,000 of each subaward (regardless of the period of performance of the subawards under the award). Modified total direct costs shall exclude equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of \$25,000. Other items may only be excluded when necessary to avoid a serious inequity in the distribution of indirect costs, and with the approval of the cognizant agency for indirect costs.

ORGANIZATION: Tulane University

AGREEMENT DATE: 11/19/2018

SECTION I: FRINGE BENEFIT RATES**

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE(%)</u>	<u>LOCATION</u>	<u>APPLICABLE TO</u>
FIXED	7/1/2018	6/30/2019	23.20	All	Uptown Faculty
FIXED	7/1/2018	6/30/2019	24.20	All	Uptown Staff
FIXED	7/1/2018	6/30/2019	5.10	All	Uptown Fac-Sum
FIXED	7/1/2018	6/30/2019	18.90	All	HSC Faculty
FIXED	7/1/2018	6/30/2019	26.80	All	HSC Staff
FIXED	7/1/2018	6/30/2019	17.00	All	HSC Physicians
FIXED	7/1/2018	6/30/2019	4.40	All	HSC FPP
FIXED	7/1/2018	6/30/2019	16.90	All	HSC Residents
FIXED	7/1/2018	6/30/2019	3.90	All	Students & PT Staff
FIXED	7/1/2018	6/30/2019	16.30	All	Post Docs
FIXED	7/1/2019	6/30/2020	19.30	All	Uptown Faculty
FIXED	7/1/2019	6/30/2020	21.70	All	Uptown Staff
FIXED	7/1/2019	6/30/2020	4.90	All	Uptown Fac-Sum
FIXED	7/1/2019	6/30/2020	18.80	All	HSC Faculty
FIXED	7/1/2019	6/30/2020	25.00	All	HSC Staff
FIXED	7/1/2019	6/30/2020	15.80	All	HSC Physicians
FIXED	7/1/2019	6/30/2020	4.70	All	HSC FPP
FIXED	7/1/2019	6/30/2020	18.70	All	HSC Residents
FIXED	7/1/2019	6/30/2020	9.10	All	Students & PT Staff
FIXED	7/1/2019	6/30/2020	14.20	All	Post Docs
PROV.	7/1/2020	6/30/2023			Use same rates and conditions as those cited for fiscal year ending June 30, 2020

** DESCRIPTION OF FRINGE BENEFITS RATE BASE:

Salaries and wages.

ORGANIZATION: Tulane University

AGREEMENT DATE: 11/19/2018

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

The fringe benefits are charged using the rate(s) listed in the Fringe Benefits Section of this Agreement. The fringe benefits included in the rate(s) are listed below.

TREATMENT OF PAID ABSENCES

Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims are not made for the cost of these paid absences.

OFF-CAMPUS DEFINITION: For all activities performed in facilities not owned by the institution and to which rent is directly allocated to the project(s) the off-campus rate will apply. Actual costs will be apportioned between on-campus and off-campus components. Each portion will bear the appropriate rate.

Equipment Definition -

Equipment means an article of nonexpendable, tangible personal property having a useful life of more than one year and an acquisition cost of \$2,500 or more per unit.

FRINGE BENEFITS:

FICA

Retirement

Worker's Compensation

Life Insurance

Unemployment Insurance

Health Insurance

Tuition Remission

Early Retirement Payout

Sabbatical Leave

Termination Pay

Day Care Subsidy

Your next fringe benefit proposal based on actual costs for the fiscal year ending 06/30/2019 is due in our office by 12/31/2019.

Your next indirect cost proposal based on actual costs for the fiscal year ending 06/30/2020 is due in our office by 12/31/2020.

ORGANIZATION: Tulane University

AGREEMENT DATE: 11/19/2018

SECTION III: GENERAL

A. LIMITATIONS:

The rates in this Agreement are subject to any statutory or administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the organization were included in its facilities and administrative cost pools as finally accepted; such costs are legal obligations of the organization and are allowable under the governing cost principles; (2) The same costs that have been treated as facilities and administrative costs are not claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the organization which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

B. ACCOUNTING CHANGES:

This Agreement is based on the accounting system purported by the organization to be in effect during the Agreement period. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this Agreement require prior approval of the authorized representative of the cognizant agency. Such changes include, but are not limited to, changes in the charging of a particular type of cost from facilities and administrative to direct. Failure to obtain approval may result in cost disallowances.

C. FIXED RATES:

If a fixed rate is in this Agreement, it is based on an estimate of the costs for the period covered by the rate. When actual costs for this period are determined, an adjustment will be made to a rate of a future year(s) to compensate for the difference between the costs used to establish the fixed rate and actual costs.

D. USE BY OTHER FEDERAL AGENCIES:

The rates in this Agreement were approved in accordance with the authority in Title 2 of the Code of Federal Regulations Part 200 (2 CFR 200), and should be applied to grants, contracts and other agreements covered by 2 CFR 200, subject to any limitations in A above. The organization may provide copies of the Agreement to other Federal Agencies to give them call notification of the Agreement.

E. OTHER:

If any Federal contract, grant or other agreement is reimbursing facilities and administrative costs by a means other than the approved rate(s) in this Agreement, the organization should (1) credit such costs to the affected programs, and (2) apply the approved rate(s) to the appropriate base to identify the proper amount of facilities and administrative cost allocable to these programs.

BY THE INSTITUTION:

Tulane University

(INSTITUTION)

(SIGNATURE)

(NAME)

(TITLE)

(DATE)

ON BEHALF OF THE FEDERAL GOVERNMENT:

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Darryl W. Mayes -
S

(SIGNATURE)

for Arif Karim

(NAME)

Director, Cost Allocation Services

(TITLE)

11/19/2018

(DATE) 6890

HHS REPRESENTATIVE:

Ernest Kinneer

Telephone:

(214) 767-3261

Tulane University

Water Quality Sampling and Home Sewage Systems Inspections

Year 1

[illegible]

Subrecipient Name:

Project Title:

Year:

Tulane University

Water Quality Sampling and Home Sewage Systems Inspections

Year 2

Project Budget by Budget Category and Task													
Task #	Task 1	Task 1	Task 1/Phase I	Task 2	Task 2	Task 2/Phase II	Total	TOTAL PROJECT All Sources of Funds					
Task Name			Laboratory			Community Outreach	All Tasks						
BUDGET CATEGORY													
Personnel		No. Months	Federal	Match	No. Months	Federal	Match	Federal	Match	Federal	Match		
Sub Award Principle Director		0.12	\$ 2,638.68		\$ 21,989,0000	0.24	\$ 5,277.36	\$ 7,916.04	\$ -	\$ 7,916.04	\$ -	\$	7,916.04
Co - I - Environmental Health Microbiologist		0.84	\$ 7,486.08		\$ 8,912.0000	0.36	\$ 3,208.32	\$ 10,694.40	\$ -	\$ 10,694.40	\$ -	\$	10,694.40
Co - I - Disaster Management		0.30	\$ 2,946.90		\$ 9,823.0000	0.30	\$ 2,946.90	\$ 5,893.80	\$ -	\$ 5,893.80	\$ -	\$	5,893.80
Program Manager		0.00	\$ -		\$ 5,243.0000	0.60	\$ 3,145.80	\$ 3,145.80	\$ -	\$ 3,145.80	\$ -	\$	3,145.80
Associate Director		0.00	\$ -		\$ 7,733.0000	0.36	\$ 2,783.88	\$ 2,783.88	\$ -	\$ 2,783.88	\$ -	\$	2,783.88
Graduate Student Researcher		12.00	\$ 6,000.00		\$ -	3.00	\$ -	\$ 6,000.00	\$ -	\$ 6,000.00	\$ -	\$	6,000.00
Grants Manager		0.18	\$ 1,006.56		\$ 5,592.0000	0.18	\$ 1,006.56	\$ 2,013.12	\$ -	\$ 2,013.12	\$ -	\$	2,013.12
Total Personnel			\$ 20,078.22	\$			\$ 18,368.82	\$		\$ 38,447.04	\$		38,447.04
Fringe Benefits													
Sub Award Principle Director			\$ 498.71		18.90%		\$ 997.42	\$ 1,496.13	\$ -	\$ 1,496.13	\$ -	\$	1,496.13
Co - I - Environmental Health Microbiologist			\$ 1,414.87		18.90%		\$ 606.37	\$ 2,021.24	\$ -	\$ 2,021.24	\$ -	\$	2,021.24
Co - I - Disaster Management			\$ 556.96		18.90%		\$ 556.96	\$ 1,113.93	\$ -	\$ 1,113.93	\$ -	\$	1,113.93
Program Manager			\$ -		26.80%		\$ 843.07	\$ 843.07	\$ -	\$ 843.07	\$ -	\$	843.07
Associate Director			\$ -		26.80%		\$ 746.08	\$ 746.08	\$ -	\$ 746.08	\$ -	\$	746.08
Graduate Student Researcher			\$ 234.00		3.90%		\$ -	\$ 234.00	\$ -	\$ 234.00	\$ -	\$	234.00
Grants Manager			\$ 269.76		26.80%		\$ 269.76	\$ 539.52	\$ -	\$ 539.52	\$ -	\$	539.52
Total Fringe Benefits			\$ 2,974.30	\$ -			\$ 4,019.67	\$ 6,993.97	\$ -	\$ 6,993.97	\$ -	\$	6,993.97
Travel													
Mileage to and from sampling sites		1,285.00	\$ 700.33		\$ 0.5450	550.00	\$ 299.75	\$ 1,000.08	\$ -	\$ 1,000.08	\$ -	\$	1,000.08
Total Travel			\$ 700.33	\$ -		550.00	\$ 299.75	\$ 1,000.08	\$ -	\$ 1,000.08	\$ -	\$	1,000.08
Supplies													
Citizen Science Program Supplies		0.00	\$ -		\$ 1,000.00	1.00	\$ 1,000.00	\$ 1,000.00	\$ -	\$ 1,000.00	\$ -	\$	1,000.00
Educational Presentations Supplies		1.00	\$ 13,890.00		\$ 727.00	1.00	\$ 727.00	\$ 727.00	\$ -	\$ 727.00	\$ -	\$	727.00
Enteric Pathogen Analysis		0.00	\$ -		\$ -	0.00	\$ -	\$ 13,890.00	\$ -	\$ 13,890.00	\$ -	\$	13,890.00
		0.00	\$ -		\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$	\$ -
		0.00	\$ -		\$ -	0.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$	\$ -
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		0.00	\$ -		\$ -	0.00	\$ -	\$ -	\$ -</				

Tulane University

Water Quality Sampling and Home Sewage Systems Inspections

Year 3

Project Budget by Budget Category and Task												
Task #	Task 1	Task 1	Task 1/Phase I	Task 2	Task 2	Task 2/Phase II	Total	TOTAL PROJECT All Sources of Funds				
Task Name			Laboratory			Community Outreach	All Tasks					
BUDGET CATEGORY								Federal	Match	Federal	Match	
Personnel												
	Month Rate	No. Months		Month Rate	No. Months							
Sub Award Principle Director	\$ 22,539,000.00	0.09	\$ 2,028.51	\$ 22,539,000.00	0.18	\$ 4,057.02		\$ 6,086.53	\$ -	\$ 6,086.53	\$ -	\$ 6,086.53
Co - I - Environmental Health Microbiologist	\$ 9,135,000.00	0.30	\$ 2,740.50	\$ 9,135,000.00	0.15	\$ 1,370.25		\$ 4,110.75	\$ -	\$ 4,110.75	\$ -	\$ 4,110.75
Co - I - Disaster Management	\$ 10,068,000.00	0.23	\$ 2,265.30	\$ 10,068,000.00	0.23	\$ 2,265.30		\$ 4,530.60	\$ -	\$ 4,530.60	\$ -	\$ 4,530.60
Program Manager	\$ 5,374,000.00	0.00	\$ -	\$ 5,374,000.00	0.45	\$ 2,418.30		\$ 2,418.30	\$ -	\$ 2,418.30	\$ -	\$ 2,418.30
Associate Director	\$ 7,926,000.00	0.00	\$ -	\$ 7,926,000.00	0.27	\$ 2,140.02		\$ 2,140.02	\$ -	\$ 2,140.02	\$ -	\$ 2,140.02
Graduate Student Researcher	\$ 500,000.00	0.00	\$ -	\$ 500,000.00	0.00	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
Grants Manager	\$ 5,732,000.00	0.09	\$ 515.88	\$ 5,732,000.00	0.18	\$ 1,031.76		\$ 1,547.64	\$ -	\$ 1,547.64	\$ -	\$ 1,547.64
Total Personnel			\$ 7,550.19			\$ 13,282.65		\$ 20,832.84	\$ -	\$ 20,832.84	\$ -	\$ 20,832.84
Fringe Benefits												
Sub Award Principle Director	\$ 18,90%		\$ 383.39	\$ 18,90%		\$ 766.78		\$ 1,150.17	\$ -	\$ 1,150.17	\$ -	\$ 1,150.17
Co - I - Environmental Health Microbiologist	\$ 18,90%		\$ 517.95	\$ 18,90%		\$ 258.98		\$ 776.93	\$ -	\$ 776.93	\$ -	\$ 776.93
Co - I - Disaster Management	\$ 18,90%		\$ 428.14	\$ 18,90%		\$ 428.14		\$ 856.28	\$ -	\$ 856.28	\$ -	\$ 856.28
Program Manager	\$ 26,80%		\$ -	\$ 26,80%		\$ 648.10		\$ 648.10	\$ -	\$ 648.10	\$ -	\$ 648.10
Associate Director	\$ 26,80%		\$ -	\$ 26,80%		\$ 573.53		\$ 573.53	\$ -	\$ 573.53	\$ -	\$ 573.53
Graduate Student Researcher	\$ 3,90%		\$ -	\$ 3,90%		\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
Grants Manager	\$ 26,80%		\$ 138.26	\$ 26,80%		\$ 276.51		\$ 414.77	\$ -	\$ 414.77	\$ -	\$ 414.77
Total Fringe Benefits			\$ 1,467.74			\$ 2,982.04		\$ 4,419.78	\$ -	\$ 4,419.78	\$ -	\$ 4,419.78
Travel												
Mileage to and from sampling sites	\$ 0.5450	0.00	\$ -	\$ 0.5450	0.00	\$ 500.04		\$ 500.04	\$ -	\$ 500.04	\$ -	\$ 500.04
Total Travel			\$ -	\$ -		\$ 500.04		\$ 500.04	\$ -	\$ 500.04	\$ -	\$ 500.04
Supplies												
	Unit Cost	Quantity		Unit Cost	Quantity							
Citizen Science Program Supplies	\$ -	0.00	\$ -	\$ 1,000.00	1.00	\$ 1,000.00		\$ 1,000.00	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00
Educational Presentations Supplies	\$ -	0.00	\$ -	\$ 727.00	1.00	\$ 727.00		\$ 727.00	\$ -	\$ 727.00	\$ -	\$ 727.00
Entercic Pathogen Analysis	\$ 13,890.00	0.00	\$ -	\$ -	0.00	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	0.00	\$ -	\$ -	0.00	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
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	\$ -	0.00	\$ -	\$ -	0.00	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	0.00	\$ -	\$ -	0.00	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
Total Supplies			\$ -	\$ -	2.00	\$ 1,727.00		\$ 1,727.00	\$ -	\$ 1,727.00	\$ -	\$ 1,727.00
Other (Operating & Professional Svcs.)												
	Unit Cost	Quantity		Unit Cost	Quantity							
Printing (Brochures/Door Hangers)	\$ 1,400,000.00	0.00	\$ -	\$ 500,000.00	0.50	\$ 250.00		\$ 250.00	\$ -	\$ 250.00	\$ -	\$ 250.00
Venue Rental	\$ 250,000.00	0.00	\$ -	\$ 1,400,000.00	0.50	\$ 700.00		\$ 700.00	\$ -	\$ 700.00	\$ -	\$ 700.00
Postage	\$ 25,000.00	0.00	\$ -	\$ 250,000.00	0.50	\$ 125.00		\$ 125.00	\$ -	\$ 125.00	\$ -	\$ 125.00
Participant Incentives (\$25/participant/1000 group)	\$ 25,000.00	0.00	\$ -	\$ 25,000.00	10.00	\$ 250.00		\$ 250.00	\$ -	\$ 250.00	\$ -	\$ 250.00
	\$ -	0.00	\$ -	\$ -	0.00	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -
Total Other (Operating & Professional Svcs.)			\$ -	\$ -		\$ 1,325.00		\$ 1,325.00	\$ -	\$ 1,325.00	\$ -	\$ 1,325.00
Total Direct			\$ 9,017.93	\$ -		\$ 19,786.72		\$ 28,604.66	\$ -	\$ 28,604.66	\$ -	\$ 28,604.66
Indirect Costs (12% Indirect Rate)			\$ 1,082.15			\$ 2,374.41		\$ 3,456.56	\$ -	\$ 3,456.56	\$ -	\$ 3,456.56
Total			\$ 10,100.08	\$ -		\$ 22,161.13		\$ 32,261.21	\$ -	\$ 32,261.21	\$ -	\$ 32,261.21

Tulane University

Water Quality Sampling and Home Sewage Systems Inspections

Year 1 -3 Total

[illegible]

6I - PROPOSED PAYMENT SCHEDULE UNDER FIXED PRICE SUBAWARD TO TULANE UNIVERSITY

THIS SCHEDULE WAS PREPARED IN THE CONTEXT OF ATTACHMENT 6C - PROJECT TIMELINE AND MILESTONES

A determination by the PTE PI that monthly progress reports demonstrate proper work conducted pursuant to the grant agreement is required for approval of each quarterly invoice, which is due on the 5th day of each month shown below.

Invoices are payable within 30 days of approval of the invoice.

	Jan-19	Apr-19	Jul-19	Oct-19	Jan-20	Apr-20	Jul-20	Oct-20	Jan-21	Apr-21	Jul-21	Oct-21	
Payment #	1	2	3	4	5	6	7	8	9	10	11	12	Total
Contract Status	Exec.											Close	
Task 1 - Laboratory	5,634	5,634	5,634	5,634	5,634	5,634	5,634	5,634	5,634	NA	NA	5,639	56,345
Task 2 - Community	11,841	9,473	9,473	9,473	9,473	9,473	9,473	9,473	9,473	9,473	9,473	11,844	118,415
INVOICE TOTAL	17,475	15,107	15,107	15,107	15,107	15,107	15,107	15,107	15,107	9,473	9,473	17,483	174,760

Form **W-9**
(Rev. November 2017)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

► Go to www.irs.gov/FormW9 for instructions and the latest information.

Give Form to the
requester. Do not
send to the IRS.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

The Administrators of the Tulane Educational Fund

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☒ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► _____
Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ►

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) **X**

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

6823 St. Charles Avenue

6 City, state, and ZIP code

New Orleans, LA 70118

7 List account number(s) here (optional)

Requester's name and address (optional)

Print or type.
See Specific Instructions on page 3.

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

____ - ____ - ____

OR

Employer identification number

7 2 - 0 4 2 3 8 8 9

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign
Here

Signature of
U.S. person ►

Date ►

2/5/18

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

Insert Logo Here



Payee Name in DUNS:

Payee Name on IRS W-9:

Physical Address:

Mailing Address for Payments:

INVOICE NUMBER: FPSA01-MS00D68218-##

Date: 00/00/0000

TO: Dr. Brady Skaggs, Lake Pontchartrain Basin Foundation (LPBF), PI for PTE
Transmitted via email to brady@saveourlake.org

FROM:

Email:

Cell Phone:

TASK	Amount
Task 1 – Laboratory	
Task 2 – Community	
Total Due	

NOTE: The timing of invoice submission (in PDF format) must match the schedule in the grant agreement: on the 5th day of month and on a quarterly basis. This invoice is payable by the Lake Pontchartrain Basin Foundation within 30 days following approval of work performed. Approval by LPBF involves review of three (3) monthly progress reports submitted timely during the invoice period, including the 3rd report submitted following this invoice and due on the 15th day of the same month.

Agreement ID: FPSA01-MX00D68218

FDP Data Transfer and Use Agreement ("Agreement")	
Provider: The Administrators of the Tulane Educational Fund	Recipient: Lake Pontchartrain Basin Foundation
Provider Scientist Name: Maureen Lichtveld, MD MPH Email: mlichtve@tulane.edu	Recipient Scientist Name: Brady Skaggs, PhD Email: brady@saveourlake.org
Agreement Term Start Date: Date of last signature below End Date: Three (3) Years after the Start Date	Project Title: Gulf of Mexico Program Attachment 2 Type: Limited Data Set
<p align="center">Terms and Conditions</p> <ol style="list-style-type: none"> 1) Provider shall provide the data set described in Attachment 1 (the "Data") to Recipient for the research purpose set forth in Attachment 1 (the "Project"). Provider shall retain ownership of any rights it may have in the Data, and Recipient does not obtain any rights in the Data other than as set forth herein. 2) If applicable, reimbursement of any costs associated with the preparation, compilation, and transfer of the Data to the Recipient will be addressed in Attachment 1. 3) Recipient shall not use the Data except as authorized under this Agreement. The Data will be used solely to conduct the Project and solely by Recipient Scientist and Recipient's faculty, employees, fellows, students, and agents ("Recipient Personnel") and Collaborator Personnel (as defined in Attachment 3) that have a need to use, or provide a service in respect of, the Data in connection with the Project and whose obligations of use are consistent with the terms of this Agreement (collectively, "Authorized Persons"). 4) Except as authorized under this Agreement or otherwise required by law, Recipient agrees to retain control over the Data and shall not disclose, release, sell, rent, lease, loan, or otherwise grant access to the Data to any third party, except Authorized Persons, without the prior written consent of Provider. Recipient agrees to establish appropriate administrative, technical, and physical safeguards to prevent unauthorized use of or access to the Data and comply with any other special requirements relating to safeguarding of the Data as may be set forth in Attachment 2. 5) Recipient agrees to use the Data in compliance with all applicable laws, rules, and regulations, as well as all professional standards applicable to such research. 6) Recipient is encouraged to make publicly available the results of the Project. Before Recipient submits a paper or abstract for publication or otherwise intends to publicly disclose information about the results of the Project, the Provider will have thirty (30) days from receipt to review proposed manuscripts and ten (10) days from receipt to review proposed abstracts to ensure that the Data is appropriately protected. Provider may request in writing that the proposed publication or other disclosure be delayed for up to thirty (30) additional days as necessary to protect proprietary information. 	


Agreement ID: FPSA01-MX00D68218

- 7) Recipient agrees to recognize the contribution of the Provider as the source of the Data in all written, visual, or oral public disclosures concerning Recipient's research using the Data, as appropriate in accordance with scholarly standards and any specific format that has been indicated in Attachment 1.
- 8) Unless terminated earlier in accordance with this section or extended via a modification in accordance with Section 13, this Agreement shall expire as of the End Date set forth above. Either party may terminate this Agreement with thirty (30) days written notice to the other party's Authorized Official as set forth below. Upon expiration or early termination of this Agreement, Recipient shall follow the disposition instructions provided in Attachment 1, provided, however, that Recipient may retain one (1) copy of the Data to the extent necessary to comply with the records retention requirements under any law, and for the purposes of research integrity and verification.
- 9) Except as provided below or prohibited by law, any Data delivered pursuant to this Agreement is understood to be provided "AS IS." PROVIDER MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE USE OF THE DATA WILL NOT INFRINGE ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER PROPRIETARY RIGHTS. Notwithstanding, Provider, to the best of its knowledge and belief, has the right and authority to provide the Data to Recipient for use in the Project.
- 10) Except to the extent prohibited by law, the Recipient assumes all liability for damages which may arise from its use, storage, disclosure, or disposal of the Data. The Provider will not be liable to the Recipient for any loss, claim, or demand made by the Recipient, or made against the Recipient by any other party, due to or arising from the use of the Data by the Recipient, except to the extent permitted by law when caused by the gross negligence or willful misconduct of the Provider. No indemnification for any loss, claim, damage, or liability is intended or provided by either party under this Agreement.
- 11) Neither party shall use the other party's name, trademarks, or other logos in any publicity, advertising, or news release without the prior written approval of an authorized representative of that party. The parties agree that each party may disclose factual information regarding the existence and purpose of the relationship that is the subject of this Agreement for other purposes without written permission from the other party provided that any such statement shall accurately and appropriately describe the relationship of the parties and shall not in any manner imply endorsement by the other party whose name is being used.
- 12) Unless otherwise specified, this Agreement and the below listed Attachments embody the entire understanding between Provider and Recipient regarding the transfer of the Data to Recipient for the Project:
 - I. Attachment 1: Project Specific Information
 - II. Attachment 2: Data-specific Terms and Conditions
 - III. Attachment 3: Identification of Permitted Collaborators (if any)
- 13) No modification or waiver of this Agreement shall be valid unless in writing and executed by duly-authorized representatives of both parties.

Agreement ID: FPSA01-MX00D68218

14) The undersigned Authorized Officials of Provider and Recipient expressly represent and affirm that the contents of any statements made herein are truthful and accurate and that they are duly authorized to sign this Agreement on behalf of their institution.

By an Authorized Official of Provider:

 2/8/2019
Date

Name: Tami Jenniskens

Title: Associate Director, Sponsored Projects Admin.

Contact Information for Formal Notices:

Name: Administrators of the Tulane Educational Fund

Address: 1430 Tulane Avenue, Box 8915, New
Orleans, LA 70112-2699

Email: tjennis@tulane.edu

Phone: 504-988-5615

By an Authorized Official of Recipient:

Date

Name: Kristi Trail, PE

Title: Executive Director

Contact Information for Formal Notices:

Name: Lake Pontchartrain Basin Foundation

Address: 2045 Lakeshore Drive, CERM Bldg #339
New Orleans, LA 70122-3534

Email: kristi@saveourlake.org

Phone: 504-836-2215

Agreement ID: FPSA01-MX00D68218

Attachment 1
Data Transfer and Use Agreement
Project Specific Information

1. Description of Data:

The data governed under this agreement will be obtained by personnel of the Administrators of the Tulane Educational Fund (dba Tulane University) as part of the Gulf of Mexico Program (Award 00D68218) under Fixed Price Subaward Agreement No. FPSA01-MX00D68218. Data will consist of both human subjects data and non-human subjects data (environmental data). Human subjects data will consist of transcripts of interviews with local leaders (e.g., elected or appointed officials, leaders of community organizations, government employees) and transcripts of two focus groups with up to 20 residents living in St. Tammany Parish, Louisiana. Environmental data will consist of results of analysis of up to 200 water samples from St. Tammany Parish for fecal indicators and enteric pathogens.

+

2. Description of Project:

Recipient will use the data for the purpose of meeting obligations for an award from the Environmental Protection Agency (#00D68218). The Recipient seeks to improve surface waters in residential communities utilizing aerated treatment units for wastewater management. The project will assess water quality, waterborne pathogens, and vectors of human diseases and also will correlate these parameters, intervene to improve conditions, and educate area residents and community leaders. Recipient is permitted to link the data to other data sets.

Recipient personnel and Provider personnel will co-author any papers or abstracts for publication based upon this project's data.

3. Provider Support and Data Transmission:

Provider shall transmit the Data to Recipient: (select one) ☒ electronically or ☐ by mail to:

Name:	Brady Skaggs, PhD
Address:	2045 Lakeshore Drive, CERM Bldg #339 New Orleans, LA 70122-3534
Email:	brady@saveourlake.org
Phone:	504-836-2235

Agreement ID: FPSA01-MX00D68218

Upon execution of this Agreement, Provider shall send any specific instructions necessary to complete the transfer of the Data to the contact person listed above, if not already included below in this section of Attachment 1.

Human subjects data will consist of written transcripts in Microsoft Word documents. Environmental data will be made available in Microsoft Excel spreadsheets. Any data dictionaries or codebooks that the Provider might create will be provided to the Recipient. Provider will be available to assist Recipient with questions about the data structure. If errors are discovered in the data by either the Recipient or the Provider, the Provider will correct and re-send the data files to the Recipient.

4. Reimbursement of Costs:

☐

None

☐

As governed by a separate written agreement between the parties
Reimbursement Agreement Reference # (if required):

☒

As set forth herein:

The Provider's costs of preparing and transferring data to Recipient are governed under Fixed Price Research Subaward Agreement No. FPSA01-MX00D68218.

5. Disposition Requirements upon the termination or expiration of the Agreement:

Recipient should follow the Environmental Protection Agency's terms and conditions about data retention and disposal.

Agreement ID: FPSA01-MX00D68218

Attachment 2
Data Transfer and Use Agreement
Data-specific Terms and Conditions:
Limited Data Set

Additional Terms and Conditions:

1. Nothing herein shall authorize the Recipient to use or further disclose the Data in a manner that would violate the requirements of Provider under 45 CFR 164.514.
2. Recipient shall not use or further disclose the Data other than as permitted by this Agreement or as otherwise required by law.
3. Recipient shall report to the Provider any use or disclosure of the Data not provided for by this Agreement within 5 business days of when it becomes aware of such use or disclosure.
4. Provider is a HIPAA Covered Entity, and the Data will be a Limited Data Set as defined by the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"). In accordance with Section 164.514(e)(2) of the HIPAA Privacy Rule, the Data shall exclude the following direct identifiers of the individual or of relatives, employers, or household members of the individual:
 - (i) Names;
 - (ii) Postal address information, other than town or city, State, and zip code;
 - (iii) Telephone numbers;
 - (iv) Fax numbers;
 - (v) Electronic mail addresses;
 - (vi) Social security numbers;
 - (vii) Medical record numbers;
 - (viii) Health plan beneficiary numbers;
 - (ix) Account numbers;
 - (x) Certificate/license numbers;
 - (xi) Vehicle identifiers and serial numbers, including license plate numbers;
 - (xii) Device identifiers and serial numbers;
 - (xiii) Web Universal Resource Locators (URLs);
 - (xiv) Internet Protocol (IP) address numbers;
 - (xv) Biometric identifiers, including finger and voice prints; and
 - (xvi) Full face photographic images and any comparable images.

If the Data being provided is coded, the Provider will not release, and the Recipient will not request, the key to the code.

5. Recipient will not use the Data, either alone or in concert with any other information, to make any effort to identify or contact individuals who are or may be the sources of Data without specific written approval from Provider and appropriate Institutional Review Board approval, if required pursuant to 45 CFR 46. Should Recipient inadvertently receive identifiable information or otherwise identify a subject, Recipient shall promptly notify Provider and follow Provider's reasonable written instructions, which may include return or destruction of the identifiable information.
6. By signing this Agreement, Recipient provides assurance that relevant institutional policies and applicable federal, state, or local laws and regulations (if any) have been followed, including the completion of any IRB or ethics review or approval that may be required.
7. The parties agree to take such action as is necessary to amend this Agreement, from time to time, in order for the Provider to remain in compliance with the requirements of HIPAA.

Agreement ID: FPSA01-MX00D68218

Attachment 3
Data Transfer and Use Agreement
Identification of Permitted Collaborators (if any)

For all purposes of this Agreement, the definition of "Collaborator Personnel" checked below will pertain:



"Collaborator Personnel" means: None. No collaborators are permitted on the Project.

-OR-



"Collaborator Personnel" means as set forth below and agreed upon between the Parties:

Attachment B

D R A F T

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE LAKE PONTCHARTRAIN BASIN FOUNDATION &
ST. TAMMANY PARISH MOSQUITO ABATEMENT DISTRICT**

This Memorandum of Understanding (MOU) is made and entered into this _____ day of January, 2019, the effective date of said agreement, by and among the **Lake Pontchartrain Basin Foundation ("LPBF")**, a not-for-profit, non-governmental organization located in Louisiana and having an address at 2045 Lakeshore Dr., Suite 339, New Orleans, LA 70122; and the **St. Tammany Parish Mosquito Abatement District ("STPMAD")**, a unit of parish government located in Louisiana and having an address at 62512 Airport Rd., Bldg. 23, Slidell, LA 70460; collectively referred to as the parties ("Parties") who enter into this MOU as set forth below:

RECITALS

WHEREAS, both Parties acknowledge the importance of establishing cultural, educational, and scientific relations in order to further their institutional aims; and

WHEREAS, both Parties share a common interest in developing education, research, and learning in various fields; and

WHEREAS, it is in the best interest of each party to obtain the assistance of the other party in the pursuit of the objectives and goals enumerated in this MOU; and

WHEREAS, the Parties possess the facilities and personnel necessary to pursue the objectives and fulfill the requirements of this MOU; and

NOW, THEREFORE, in consideration of the aforementioned premises and the terms and conditions contained in this MOU, the Parties agree as follows:

**ARTICLE 1
PURPOSE & SCOPE**

- 1.1 PURPOSE.** It is in the interest of the Parties to explore possible collaborations on research projects and exchanges of information and experiences in several areas of public health. This MOU will facilitate increased cooperation, between LPBF and STPMAD, for the purpose of facilitating collaborating in current and future funded projects and to assist in identifying and evaluating other opportunities that would improve public health for the residents of Saint Tammany Parish
- 1.2 SCOPE.** LPBF and STPMAD desire to promote the following activity, which may be formally developed by means of a separate legally binding agreement between the Parties:
- a) Through this MOU, LPBF and STPMAD intend to collaborate to enhance awareness of community partnership opportunities in St. Tammany Parish to protect public health.

DRAFT

- b) Explore possible collaborations on research projects and exchanges of information and experiences in several areas of public health;
- c) Seek to improve understanding between their respective institutions and to establish mutually beneficial collaborations benefiting their constituents and the public at-large; and
- d) Enhance coordination, when applicable and appropriate, in the areas of water quality, habitat restoration, community resilience, environmental education, and environmental justice.

1.3 FUNDING. The Parties acknowledge that this MOU does not in and of itself effectuate the transfer of moneys between the Parties, and, as such, the Parties acknowledge and agree to enter into additional legally binding agreements as desired and appropriate on an activity-specific basis. Pursuant to guidance from the federal Office of Management and Budget, unless STPMAD receives a federally-approved negotiated indirect cost rate, indirect costs charged by STPMAD in future proposals for funding with LPBF shall charge a de minimis rate of 10% of modified total direct costs (MTDC), pursuant to 2 CFR 200.414(f).

1.4 COMPLIANCE. STPMAD and LPBF agree to conduct all activities undertaken pursuant to this MOU in accordance with all applicable federal, state and local laws, regulations and guidance.

ARTICLE 2

TERM OF MEMORANDUM OF UNDERSTANDING

2.1 The term of this MOU shall be three years, commencing on the effective date. The MOU shall renew up on the express written consent of both Parties. At any time, either Party May, in its sole discretion, terminate this MOU with or without cause by giving the other Party at least 60 days prior written notice.

ARTICLE 3

RELATIONSHIP OF PARTIES

3.1 It is especially understood and agreed that, in the performance of activities contemplated by this MOU, LPBF and STPMAD will at all times act as independent contractors with respect to each other, and not as an employee nor agent of the other. Nothing contained in this MOU will be construed to create a joint venture, partnership, association, or other affiliation or like relationship between the Parties.

ARTICLE 4

MISCELLANEOUS PROVISIONS

4.1 ENTIRETY OF MOU; MODIFICATION. This MOU contains the entire understanding of the Parties with respect to the subject matter herein and supersedes any and all prior MOU's, oral or written, and all other communications between the Parties relating to such subject matter. This MOU may not be amended or modified except by mutual written agreement among the Parties.

DRAFT

- 4.2 NOTICE.** Any notice required to be given under this agreement by either party will be in writing and sent to the other party by either hand delivery or certified mail return receipt requested as follows:

If to STPMAD:

ADDRESSEE:
Dr. Kevin Caillouet, Director
St. Tammany Parish Mosquito Abatement District
62512 Airport Road, Building 23
Slidell, LA 70460

WITH COPY TO:
Kelly M. Rabalais, Executive Counsel
St. Tammany Parish Government
21454 Koop Drive
Mandeville, LA 70471

If to LPBF:

ADDRESSEE:
Ms. Kristi Trail, Executive Director
Lake Pontchartrain Basin Foundation
P.O. Box 6965
Metairie, LA 70009-6965

WITH COPY TO:
Mr. Stephen Conroy, General Counsel
Conroy Law Firm
Three Lakeway Center
3838 N. Causeway Blvd., Ste. 3130
Metairie, LA 70002

- 4.3 LIAISONS.** To facilitate communications between the Parties, each party will designate an individual to serve as a primary contact and otherwise liaise with the other party:

For LPBF:
Name: Brady K. Skaggs, PhD.
Title: Water Quality Program Director
Email: brady@saveourlake.org
Phone: 504-442-3602

For STPMAD:
Name: Kevin A. Caillouet, PhD
Title: Director
Email: caillouet@stpmad.org
Phone: 985-643-5050

IN WITNESS WHEREOF, the Parties have executed this MOU in two (2) originals in equal meaning and content and the Parties agree that this MOU represents their intention in relation to the activities described herein.

THE LAKE PONTCHARTRAIN
BASIN FOUNDATION

Signed by: _____
Name: Kristi Trail
Title: Executive Director
Date: _____

THE ST. TAMMANY PARISH
MOSQUITO ABATEMENT DISTRICT

Signed by: K. Caillouet
Name: Kevin Caillouet
Title: Director
Date: 1/16/19

*Sworn to and subscribed before
me this 16th day of January, 2019*
[Signature]
Notary Public
No. 2282

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE LAKE PONTCHARTRAIN BASIN FOUNDATION &
ST. TAMMANY PARISH MOSQUITO ABATEMENT DISTRICT**

This Memorandum of Understanding (MOU) is made and entered into this 11th day of **April, 2019**, the effective date of said agreement, by and among the **Lake Pontchartrain Basin Foundation ("LPBF")**, a not-for-profit, non-governmental organization located in Louisiana and having an address at 2045 Lakeshore Dr., Suite 339, New Orleans, LA 70122; and the **St. Tammany Parish Mosquito Abatement District ("STPMAD")**, a unit of parish government located in Louisiana and having an address at 62512 Airport Rd., Bldg. 23, Slidell, LA 70460; collectively referred to as the parties ("Parties") who enter into this MOU as set forth below:

RECITALS

WHEREAS, both Parties acknowledge the importance of establishing cultural, educational, and scientific relations in order to further their institutional aims; and

WHEREAS, both Parties share a common interest in developing education, research, and learning in various fields; and

WHEREAS, it is in the best interest of each party to obtain the assistance of the other party in the pursuit of the objectives and goals enumerated in this MOU; and

WHEREAS, the Parties possess the facilities and personnel necessary to pursue the objectives and fulfill the requirements of this MOU; and

NOW, THEREFORE, in consideration of the aforementioned premises and the terms and conditions contained in this MOU, the Parties agree as follows:

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PURPOSE & SCOPE**

- 1.1 PURPOSE.** It is in the interest of the Parties to explore possible collaborations on research projects and exchanges of information and experiences in several areas of public health. This MOU will facilitate increased cooperation, between LPBF and STPMAD, for the purpose of facilitating collaborating in current and future funded projects and to assist in identifying and evaluating other opportunities that would improve public health for the residents of Saint Tammany Parish.
- 1.2 SCOPE.** LPBF and STPMAD desire to promote the following activity, which may be formally developed by means of a separate legally binding agreement between the Parties:
- a) Through this MOU, LPBF and STPMAD intend to collaborate to enhance awareness of community partnership opportunities in St. Tammany Parish to protect public health.

- b) Explore possible collaborations on research projects and exchanges of information and experiences in several areas of public health;
- c) Seek to improve understanding between their respective institutions and to establish mutually beneficial collaborations benefiting their constituents and the public at-large; and
- d) Enhance coordination, when applicable and appropriate, in the areas of water quality, habitat restoration, community resilience, environmental education, and environmental justice.

1.3 FUNDING. The Parties acknowledge that this MOU does not in and of itself effectuate the transfer of moneys between the Parties, and, as such, the Parties acknowledge and agree to enter into additional legally binding agreements as desired and appropriate on an activity-specific basis. Pursuant to guidance from the federal Office of Management and Budget, unless STPMAD receives a federally-approved negotiated indirect cost rate, indirect costs charged by STPMAD in future proposals for funding with LPBF shall charge a de minimis rate of 10% of modified total direct costs (MTDC), pursuant to 2 CFR 200.414(f).

1.4 COMPLIANCE. STPMAD and LPBF agree to conduct all activities undertaken pursuant to this MOU in accordance with all applicable federal, state and local laws, regulations and guidance.

ARTICLE 2

TERM OF MEMORANDUM OF UNDERSTANDING

2.1 The term of this MOU shall be three years, commencing on the effective date. The MOU shall renew up on the express written consent of both Parties. At any time, either Party May, in its sole discretion, terminate this MOU with or without cause by giving the other Party at least 60 days prior written notice.

ARTICLE 3

RELATIONSHIP OF PARTIES

3.1 It is especially understood and agreed that, in the performance of activities contemplated by this MOU, LPBF and STPMAD will at all times act as independent contractors with respect to each other, and not as an employee nor agent of the other. Nothing contained in this MOU will be construed to create a joint venture, partnership, association, or other affiliation or like relationship between the Parties.

ARTICLE 4

MISCELLANEOUS PROVISIONS

4.1 ENTIRETY OF MOU; MODIFICATION. This MOU contains the entire understanding of the Parties with respect to the subject matter herein and supersedes any and all prior MOU's, oral or written, and all other communications between the Parties relating to such subject matter. This MOU may not be amended or modified except by mutual written agreement among the Parties.

- 4.2 NOTICE.** Any notice required to be given under this agreement by either party will be in writing and sent to the other party by either hand delivery or certified mail return receipt requested as follows:

If to STPMAD:

ADDRESSEE:
Dr. Kevin Caillouet, Director
St. Tammany Parish Mosquito Abatement District
62512 Airport Road, Building 23
Slidell, LA 70460

WITH COPY TO:
Kelly M. Rabalais, Executive Counsel
St. Tammany Parish Government
21454 Koop Drive
Mandeville, LA 70471

If to LPBF:

ADDRESSEE:
Ms. Kristi Trail, Executive Director
Lake Pontchartrain Basin Foundation
P.O. Box 6965
Metairie, LA 70009-6965

WITH COPY TO:
Mr. Stephen Conroy, General Counsel
Conroy Law Firm
Three Lakeway Center
3838 N. Causeway Blvd., Ste. 3130
Metairie, LA 70002

- 4.3 LIAISONS.** To facilitate communications between the Parties, each party will designate an individual to serve as a primary contact and otherwise liaise with the other party:

For LPBF:
Name: Brady K. Skaggs, PhD.
Title: Water Quality Program Director
Email: brady@saveourlake.org
Phone: 504-442-3602

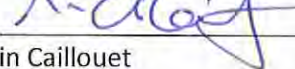
For STPMAD:
Name: Kevin A. Caillouet, PhD
Title: Director
Email: caillouet@stpmad.org
Phone: 985-643-5050

IN WITNESS WHEREOF, the Parties have executed this MOU in two (2) originals in equal meaning and content and the Parties agree that this MOU represents their intention in relation to the activities described herein.

THE LAKE PONTCHARTRAIN
BASIN FOUNDATION

Signed by: 
Name: Kristi Trail
Title: Executive Director
Date: 4-17-2019

THE ST. TAMMANY PARISH
MOSQUITO ABATEMENT DISTRICT

Signed by: 
Name: Kevin Caillouet
Title: Director
Date: 4/18/19

**Pontchartrain
Conservancy**



Project Title: AN INTEGRATED, WASTEWATER-CENTRIC APPROACH TO WATER QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT: Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens, and Mosquito Activity

Cooperative Agreement Number: MX-00D68218-2

Dates covered by this report: September 1, 2020 to February 28, 2021

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.

Due to the outbreak of Sars-Cov-2 virus causing the COVID-19 pandemic beginning in March 2020, progress on the project slowed, as the Governor's stay-at-home order prevented field monitoring. However, the following tasks continued during this period:

- Baseline monitoring was completed 9/30, 10/02 and 10/05/2020 as COVID restrictions eased and it was deemed safe to resume inspection activities.
- Home inspections were resumed on a limited basis in October of 2020.

Over the reporting period, the project team completed 34 initial home inspections and 0 follow-up, re-inspections .

Inspectors determined that a total of 20 homes failed the initial inspection, accounting for an approximate 58% initial failure rate in the project area. Of the 20 failed systems, 9 have installed septic tanks which fail to meet project criteria. During this program reporting period, inspectors noted the following:

- Homeowners with septic systems can apply for funding for money set aside by the Parish Community Development Block Grants (CDBG) program to replace systems if they meet certain criteria. Septic systems must be replaced with LDH-approved Aerated Treatment Units (ATUs).
- Project partners conducted outreach to several community organizations, real estate agencies and church groups in an attempt to schedule educational sessions. Due to little response and limited interest from these groups, we have decided to deliver flyers for sessions in March and April in the neighborhoods within the catchment area. Flyers will advertise information sessions via an online platform.

Specifically, Tulane University developed blog post topics for further community education. The areas follows:

- Water quality and wastewater run off (how are home systems connected to the waterways in Ponchitolawa)
- What's in your ditch (overview with infographic)
- Mosquitos abatement in your backyard
- ATUs and hurricanes
- Dos and don'ts maintenance tips for ATUs and septic tanks
- History of water treatment in Ponchitolawa (why do some areas have municipal wastewater)

2. Were any problems encountered? If yes, please describe corrective actions taken.

The outbreak of the Sars-Cov-2 virus resulted in a worldwide pandemic, hampering field data collection. St. Tammany Parish has allowed resumption of home inspection programs on a limited basis as of October 2020.

Tulane University noted during the project period that the Qiagen RNA extraction kits required for assessment of pathogens were on backorder from our supplier due to COVID-19 pandemic. We received the extraction kits and are now in the process of extracting RNA/DNA. The next step will be analyzing the selected pathogens using qPCR.

3. Is the project work on schedule?

Yes. Pontchartrain Conservancy (PC) received an updated Notice of Award reflecting a revised project period, extending at no cost through 2/28/2023.

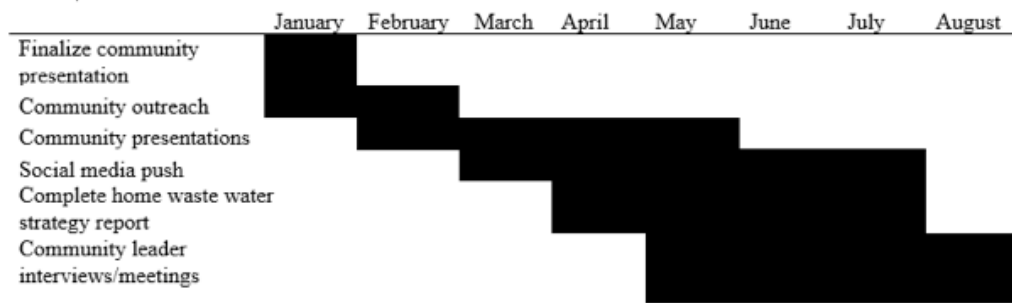
4. Document any changes in project management (personnel), and provide the updated contact information.

There have been no project personnel changes during this period.

5. Outline the work projected for the next reporting period.

PC will be conducting the following work in the next reporting period:

- Inspection efforts in the area will continue to increase as both inspectors and the greater population are vaccinated allowing for more safe interactions.
- Tulane has finalized the community presentation and will outreach to community organizations, churches and local real estate agencies within or near the watershed to advertise and schedule the sessions. Below is the revised timeline for community activities in 2021:



6. Subaward Reporting: Report on subaward monitoring activities under 2 CFR 200.331(d) that were not covered in items 1-5 above. This includes: Summaries of results of reviews of financial and programmatic reports; Summaries of findings from site visits and/or desk reviews to ensure effective subrecipient performance; Environmental results the subrecipient achieved; Summaries of audit findings and related pass-through entity management decisions; Actions the pass-through entity has taken to correct deficiencies such as those specified at 2 CFR 200.331(e), 2 CFR 200.207 and the 2 CFR Part 200.338 Remedies for Noncompliance.

During the COVID-19 stay at home order, project subrecipients Tulane University (TU) and St. Tammany Parish Mosquito Abatement District (STPMAD) continued reporting efforts amidst the pandemic. STMAP provided preliminary data related to mosquitos and mosquito fish, and TU provided updates to social media toolkit preparation.

TU laboratory partners were able to preserve samples for analysis, but due to the large demand for qPCR analysis of Sars-Cov2 sample reagents, the laboratory is limited for qPCR results on this project. Thankfully, the DNA from samples has been extracted and once preserved will last for months until processing can resume.

7. Budgetary Information

In the April - September 2018 Progress Report, PC requested a major re-budgeting of the project budget to move \$118,415 from *Contractual* to *Other*. This would make the new *Contractual* total \$41,502 and the new *Other* total \$220,960. This change has not yet occurred, resulting in a negative balance in the *Other* category on the budget report shown below. The justification for this request is provided in the April - September 2018 Progress Report.

Lake Pontchartrain Basin Foundation					
Income Statement					
GOMP MX00D68218-0 Ponchitolawa Watershed Budget to Actual					
		Cummulative to Date (Mar. 01, 2018 - Feb. 28, 2021)			
Account Code	<i>Reporting Period (Sep. 01, 2020 - Feb 28, 2021)</i>	Actual (Oct. 01, 2018 - Feb 28, 2021) new accounting software	Actual (Mar. 01, 2018 - Sep. 30, 2018) old accounting software	Budget (Mar. 01, 2018 - Sep. 30, 2018)	Remaining Funds to Expend
Revenue					
Grants & Contracts	\$38,105.82	\$181,221.80	\$10,367.62	\$412,733.00	\$221,143.58
Total Revenue	\$38,105.82	\$181,221.80	\$10,367.62	\$412,733.00	\$221,143.58
Expenses					
Salary & Wages	\$11,386.29	\$25,557.55	\$5,020.57	\$97,976.00	\$67,397.88
Fringe Benefits & Payroll Taxes	\$1,813.64	\$3,767.11	\$984.83	\$18,172.00	\$13,420.06
Travel	\$140.26	\$196.15	\$11.93	\$3,234.00	\$3,025.92
Supplies & Equipment (Less than \$5,000 per item)	\$27.52	\$27.52	\$0.00	\$11,294.00	\$11,266.48
Contractual	\$7,620.00	\$23,045.23	\$3,346.16	\$159,917.00	\$133,525.61
Other	\$15,107.00	\$123,729.09	\$0.00	\$102,545.00	(\$21,184.09)
Indirect	\$2,011.11	\$4,899.15	\$1,004.13	\$19,595.00	\$13,691.72
Total Expenses	\$38,105.82	\$181,221.80	\$10,367.62	\$412,733.00	\$221,143.58



Site	Date	Water Temp. (C)	D.O. (mg/L)	Conductance (ms)	pH	Turbidity (NTU)	Total Coliform (MPN/100mL)	E. Coli (MPN/100mL)
PC 1	09/30/20	22.0	0.30	0.1532	7.26	4.20	>2419.6	1553.1
PC 2	09/30/20	18.9	1.70	0.8680	7.81	83.31	>2419.6	>2419.6
PC 3	09/30/20	18.7	3.20	0.1422	7.22	152.17	>2419.6	277.8
PC 4	09/30/20	19.9	1.10	0.4481	7.72	7.77	>2419.6	866.4
PC 5	09/30/20	18.5	3.10	0.1054	7.46	11.54	>2419.6	214.2
PC 1	10/02/20	21.2	0.60	0.1520	7.11	3.13	>2419.6	104.6
PC 2	10/02/20	18.8	1.30	0.6830	7.67	12.28	>2419.6	980.4
PC 3	10/02/20	18.4	3.60	0.1374	7.92	48.41	>2419.6	>2419.6
PC 4	10/02/20	20.4	0.90	0.4476	7.61	7.25	>2419.6	137.6
PC 5	10/02/20	18.4	3.50	0.1023	7.36	7.50	>2419.6	387.3
PC 1	10/05/20	20.2	1.00	0.1579	7.97	9.47	307.6	48.7
PC 2	10/05/20	19.2	1.10	0.8200	7.77	15.25	>2419.6	>2419.6
PC 3	10/05/20	17.4	3.00	0.3150	7.47	94.51	1119.9	866.4
PC 4	10/05/20	19.9	1.20	0.5490	7.52	11.80	>2419.6	1046.2
PC 5	10/05/20	17.6	3.30	0.1027	7.71	7.45	816.4	36.4



Project Title: AN INTEGRATED, WASTEWATER-CENTRIC APPROACH TO WATER QUALITY IMPROVEMENT AND COMMUNITY ENGAGEMENT: Assessing Residential Aerated Treatment Units, Presence of Waterborne Pathogens, and Mosquito Activity

Cooperative Agreement Number: MX-00D68218-0

Dates covered by this report: September 1, 2019 to February 29, 2020

1. Describe the work and measurable outcomes accomplished. Provide specific details with regard to fieldwork scheduled and completed (including photographs, where possible), meetings or conferences conducted or attended.

The Tulane team finished the literature review about homeowner knowledge and behaviors about decentralized wastewater management, and outreach and education materials on the topic. The literature review indicated that across the United States, there is a need for improved maintenance of onsite systems like septic tanks and ATUs and that homeowner knowledge about these systems is generally low. And while there are likely some homeowners in the Pontchartrain watershed that are well-informed, it can be safely extrapolated from the literature that a lack of knowledge exists regarding home sewage treatment. Thus, any educational session should provide basic content about why and how to maintain an onsite unit. The results of the literature review, coupled with the difficulty of accessing individual homeowners, led Tulane to propose that they not conduct the previously planned semi-structured interviews. It is unlikely that the results of the semi-structured interviews will have a large effect on the content of community engagement activities.

On January 28, 2020, the entire Tulane team met with LPBF personnel about the project. Tulane proposed to move directly into planning community engagement activities, namely the educational presentations and the social media campaign. It was agreed that Tulane will proceed to outline the content of the presentations, drawing upon and tailoring information located through the literature review. At this time, it was also determined that IRB Review and approval would not be required. The QAPP is currently being adjusted to remove IRB processes.

Jasmine Fournier, with Tulane's Department of Environmental Health Sciences, will lead Tulane's efforts under the direction of Dr. Lichtveld. She is currently outlining the education sessions.

2. Were any problems encountered? If yes, please describe corrective actions taken.

Concerns about individual homeowner engagement led the team in a new direction regarding community education, as discussed above. The education sessions are currently being outlined. This change negates the need for a submission to Tulane's Institutional Review Board (IRB), and it also changes the direction of the QAPP. During the reporting period, Tulane personnel performing IRB submittal materials departed the institution. The position was refilled, but this delayed fulfilling the project task.

3. Is the project work on schedule?

The project timeline was adjusted and submitted with the last semi-annual report. From that new timeline, the project is approximately 3 months behind schedule with the previously reported timeline. St. Tammany Parish recommended to LPBF in the beginning of March to pause the inspection of home systems until the passage of the COVID-19 epidemic, or until it deemed safe to inspect. Preliminary information and publications suggest that the pathogen responsible for the COVID-19 outbreak may be present in untreated wastewater, although risk of transmission is believed to be low¹.

4. Document any changes in project management (personnel), and provide the updated contact information.

Ridgely Myers, P.E. joined LPBF as the Director of Operations. Ridgely will be assisting the Water Quality department with meeting project milestones and reporting.

A new project manager for Tulane University was hired, as discussed in Item 1, above.

5. Outline the work projected for the next reporting period.

LPBF will be conducting the following work in the next reporting period:

- QAPP is in final preparation after making modifications discussed in Item 2, above. LPBF will be submitting the QAPP for EPA review in April 2020.
- A field assessment of targeted areas will be performed, including the 20 ATU-utilizing neighborhoods in Ponchitolawa Creek by visual inspection of ditches holding standing sewer water.

¹ <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html>

- Partners will also evaluate the population demographics, proximity of the ditches to public areas and vulnerable populations, and historic mosquito data from STPMAD (landings, bite data, spray and control data, and epidemiologic data related to disease cases). A matrix will be completed to choose the ten (10) neighborhoods for further ("Phase I") analysis.
- Phase I assessments of target areas will also begin, including background data for the pathogen indicators (fecal coliform), adult and larvae mosquito populations, and a suite of enteric pathogens.

